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Library Trends, a quarterly journal in librarianship, provides a medium for evaluative recapitulation of current thought and practice, searching for those ideas and procedures which hold the greatest potentialities for the future.

Each issue is concerned with one aspect of librarianship. Each is planned with the assistance of an invited advisory editor. All articles are by invitation. Suggestions for future issues are welcomed and should be sent to the Managing Editor.

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Preface

The great and rapid advances in many fields of human endeavor which have been made recently have resulted directly from extensive organized research. Some of the achievements have been spectacular—the polio vaccines, guided missiles, controlled satellites readily come to mind. Others, less well publicized, have made possible the extraordinarily rapid rate of development or change, according to exponential law, that characterizes modern society. Still others, the quiet day-to-day improvements and perfections which are taking place in offices, factories, schools, fields, and homes all over the world, have come from the techniques, concepts, and ideas developed and tested by and through research.

If librarianship is to develop as the times demand or opportunity offers, it, too, must be firmly undergirded with the results of basic and continuing research. Some of it, at least, must be anticipatory. Research which answers questions already posed is valuable; that which creates and proposes is invaluable.

Now, as never before, interest and activity in research in librarianship is high. Doctoral programs have been set up in at least six library schools and more are under consideration. The recent shift to the master’s level of all professional training, despite the fact that many schools do not have an essay requirement, nevertheless has greatly increased the number of master’s essays written each year over the number produced prior to 1951.

Financial support for research has increased. The Council on Library Resources, Inc., established in September, 1956, by a grant from the Ford Foundation, has as its principal objective “to aid in the solution of library problems; to conduct research in, develop and demonstrate new techniques and methods and to disseminate through any medium the results thereof.” The first grants to be made by the Council were announced in June, 1957. Other major grants from the Carnegie Corporation, the Rockefeller Foundation, the United States Steel Foundation, Remington Rand, and the Lilly Endowment are now being expended, in part at least, for research purposes.

Further evidence of the heightening interest and concern in organized research may be seen in the committee representing five library schools under the chairmanship of Dean Robert Leigh of Columbia
University School of Library Service. They propose to undertake a coordinate research project to evaluate interlibrary cooperation in the public library field. In doing so, they have a three-fold purpose:

1. To add to reliable knowledge through objective field studies, with regard to various types and mechanisms of interlibrary cooperation in the public library field;

2. To provide a means of training especially qualified young men and women for research competence in the library field, through their participation, under supervision, in a significant, large-scale research undertaking.

3. To provide a demonstration of the value, as well as to discover the difficulties, of coordinated research among library schools equipped for such research activities.

While research can be carried out in the field, especially in the larger libraries, the center of such activities will undoubtedly, and properly, be in the library schools. Thus it was no accident that it was among the members of the Association of American Library Schools that the idea for this issue of *Library Trends* came to light, nor that Maurice Tauber was chairman of the Committee on Research of that organization coincidentally. For this Committee, under its able and energetic chairman, has produced this volume.

Members of the Committee on Research of the Association who assisted Professor Tauber on this issue include: Lester Asheim, dean, Graduate Library School, University of Chicago; Martha T. Boaz, director, School of Library Science, University of Southern California; Violet Coughlin, assistant professor, Library School, McGill University; Margaret E. Kalp, assistant professor, School of Library Science, University of North Carolina; and Harriet D. MacPherson, dean, Graduate School of Library Science, Drexel Institute of Technology.

It may be noted that *Library Trends* in its past issues has been concerned with research in the various areas of librarianship. Consistently, the articles in these issues have evaluated research in the areas under consideration. Also two earlier articles have been concerned specifically with research: "Research in the School Library Field" and "Research on the Reading of Adults." In order that the relevant available material would be brought together for easier use the editorial advisory committee has recommended the reprinting of these two articles in this issue. They are, therefore, included, with minor changes, one as the second part of Asheim's contribution, the other in its appropriate order.

H.L.
Introduction

MAURICE F. TAUBER

Some years ago1 the present chairman of the Committee on Research of the Association of American Library Schools prepared a brief paper on the need for an outline of needed research in librarianship. With the development of the master’s program in the accredited library schools and the introduction of the doctoral program in five schools (California, Columbia, Illinois, Michigan, and Western Reserve), in addition to the older program at Chicago, the time seemed ripe for a review of the present status of research in the various segments of librarianship. Moreover, it appeared desirable to point up those areas of the field in which research might prove fruitful for faculty members, students, and practicing librarians. In order to pinpoint the achievements which have been made, it was considered relevant to discuss to some extent the nature of research as carried on in the past. The real concern, however, is for the development of a program for the future.

In his paper at the 1948 Conference of the Graduate Library School of the University of Chicago 2 B. R. Berelson observed that “It is not surprising that research in librarianship (as in other fields outside the natural sciences) is spotty; it would be surprising if it were not . . . some areas within the field have received more attention and some less. (Whether any areas have received enough attention is another question.)”

Berelson commented further upon the unevenness in research and proposed a planned-research economy for the library schools to sponsor. Designation of research problems of first importance “would provide for the continuity and the coral-like development of genuine scientific activity.” Although it is almost ten years since Berelson made these observations, one is led to conclude that the picture has not altered to any significant degree.

Various writers on the problems of research in librarianship have called attention to the scarcity of librarians with proper training and

Mr. Tauber is Melvil Dewey Professor, School of Library Service, Columbia University.
background in research methods. Moreover, many of the graduates of a doctoral program have gone into administrative positions which leave them little time for original studies. Finally, the financial support of library investigations has been so meager that there is little opportunity to do more than peck at major problems, without the continuity and coral-like development suggested by Berelson. He further observed in this connection that "Research takes people, brains, energy, time, money—and it takes a lot of them." \(^3\) Compared to other fields, librarianship has had relatively little with which to work.

In the last few years, there have been some changes in this respect. The grants of foundations to libraries and to library schools have been stepped up to a significant degree. Industry, too, has begun to associate itself with advanced study and research in library schools. The establishment of the Council on Library Resources, Inc., in 1956 under a $5,000,000 grant from the Ford Foundation is a development of the greatest importance.\(^4\) The purpose of the Council is to support research and the progress of libraries. Librarians, library school faculty members, and advanced students have an opportunity to work with the Council in the isolation and study of major and basic problems which will promote and extend the usefulness of libraries.

Turning to the contents of this issue Lowell Martin in his paper states that "Research produces knowledge. Knowledge is needed for understanding. Understanding combined with skill leads to effective action." In many ways, these three sentences serve as a theme for the issue. The contributors have had a difficult task in combing the segments of librarianship assigned to them. As Jesse Shera points out in his paper "research" is a "slippery word." Leon Carnovsky, who has been responsible during the past few years for the compilations in the *Library Quarterly* of studies prepared in library schools, has emphasized that the inclusion of certain investigations, reports, or surveys does not automatically qualify them for the label of "research." In the present issue, Carnovsky further notes that librarianship as a field of research depends upon the successful application of the methods and techniques found useful in other disciplines.

Undoubtedly, readers will find that certain studies of which they have knowledge are not considered by the contributors. They have differed in their treatments of the fields assigned to them, and have used such examples of research as they believe make the points with which they are concerned. Further, it should be observed that the differences among the several fields required a variety of approaches.

One of the fields in which there is much discussion is known as docu-

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The consideration of research and developments in documentation is provided by Shera. Many librarians have been somewhat puzzled by the scope of this field, and Shera's paper clearly suggests its umbrella-like coverage of such areas as bibliography, reference, information services and user problems, cataloging and classification, indexing, microreproduction, preservation, and publication. Mechanical searching and translating systems are associated with the field. In his listing of current research in documentation, Shera includes certain titles which are referred to by Rudolph Gjelsness in his review of cataloging and classification. Since it was considered desirable to have the entire field of documentation outlined, this overlap has been allowed to remain. The observation should be made, however, that librarianship and documentation interweave to such an extent that it is often difficult to note the differences between the two. In his review of research in documentation, Shera makes the pertinent reference to the non-library school sponsoring of studies by business and industrial organizations, universities and other non-profit organizations, governmental agencies, and private individuals. One factor in respect to some of the research by groups outside of library schools is financial backing; another is the presence of expensive apparatus not usually possessed by the schools.

Although it may be hazardous to do so, it may be worth while summarizing salient points expressed by the contributors. These may be listed as follows:

1. The most successful research in backgrounds in librarianship has recognized the importance of social, cultural, and other influences upon the library.

2. Research in the fields of philosophy of librarianship and the relations of libraries to government and society has barely begun.

3. A good start has been made in the study of library history and bibliography, but the areas are wide open for research.

4. Much research needs to be done on the relations between the various media of mass communication.

5. Librarians should be intimately concerned with research into problems of communication, even though the areas of study outlined will be undertaken primarily by social scientists in the many branches of their discipline.

6. Studies showing the results of research in library management in a variety of types of situations, including the untouche field of human relations, should be one of the goals of individual library administra-
tors, as well as professional organizations, state agencies, and similar groups.

7. The quality and effectiveness of service to individuals is largely undetermined; research on the methods and the resources for expanding and extending such service is necessary.

8. Research into all phases of resources (Farmington Plan, inter-library centers, specialization in collecting, union catalogs, bibliographical centers, storage libraries, regional distribution of resources, micro-reproduction, serial literature, acquisition policies, and inter-library loans) is essential if librarians are to get beyond guesswork in their operations and services.

9. Studies are needed for the development of standards in descriptive cataloging, subject cataloging, and classification on national and international bases.

10. Exacting investigations of various types of catalogs, as well as of the administration of cataloging departments, would provide the knowledge that librarians need as records become more complex with growing collections.

11. Because of the pressures upon librarians serving researchers (in science and technology, particularly, but not exclusively), investigation into ways and means of content analysis, storage of information, and immediate retrieval has been accelerated.

12. Basic examinations are needed of all aspects of library education—programs, curricula, instructional methods, relations between performance on the job and library school training, and the place of the library school in the structure of higher education.

13. Successful research in librarianship requires recognition of the rigid methodologies of other disciplines.

14. Coordinated support of research by professional associations in relation to the library schools and other agencies is essential if investigation is to be continuous and systematic.

15. Library school faculties, particularly those associated with institutions having advanced or doctoral programs, have a special responsibility for the development of integrated programs of research.

16. Financial support is necessary for qualified students who need to be free from day-to-day work responsibilities if they are to complete investigations which would be useful to the profession.

There are some librarians who deplore any emphasis upon research in librarianship. Is not librarianship an art, they say, not subject to the exact measurements of scientific inquiry or objective study? What is
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wrong with what we are doing? What possibly could be added to our knowledge through systematic study? To these individuals, the answer to our problems is simple: librarians should read more books.

There is no question that librarians should improve their effectiveness as they acquire depth in book knowledge. Actually, there should be no conflict between the point of view of the book-reader and the exponent of research. Libraries—public, academic, governmental, special, and school—have become complex organizations, and as the contributors to this issue show, careful studies of problems arising out of the complexity should provide the librarian with a basis for greater understanding, should improve his judgment, and should reduce the load of his work. Research will never replace the art in librarianship; it may, however, make the practice of such art easier and more effective.

The Committee on Research of the Association of American Library Schools hopes that this issue of Library Trends will prove useful to those interested in studying problems of librarianship which require solution. It would be revealing, especially since research in the field is beginning to attract financial support, to re-examine the situation periodically. Chase Dane proposes a formal group for reviewing, evaluating, and pressing the application of research. Certainly there is the need for the coordination which he suggests.

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3. Ibid., p. 223.
Research in Backgrounds in Librarianship

HAYNES McMULLEN

The word "backgrounds" is vague enough to cover almost anything. Perhaps the backgrounds of librarianship include social history, intellectual history, and the history of mass media of communication. However, in this issue of Library Trends the word "backgrounds" is used to cover writing which is about libraries and which either shows their relationship to other aspects of life or deals with general characteristics of groups of libraries.

This article will first review recent writing about what is perhaps the most general of all library topics, the philosophy of librarianship. Then it will move to a small group of studies about the relationships of libraries to society. It will then mention a few more studies which describe the functions of differing types of libraries. Finally, it will review some of the many publications in the most popular "background" field, library history and biography. In each instance suggestions for future study will be mentioned.

Some librarians believe that there can be no such thing as a general philosophy of librarianship, and other librarians believe that it exists but that it is not a form of research. So some sort of definition or defense is needed if philosophy has a right to a place along with other forms of serious writing about librarianship.

Some librarians who argue against the existence of a general philosophy of librarianship say that every library exists to serve certain particular needs of particular groups of human beings and that, therefore, the philosophy of each individual library is not really a library philosophy but is a reflection of the philosophy of the group which it serves. Others feel that if librarianship as a whole is to have a philosophy it must be related to some general philosophy of life which is accepted by large numbers of people and that, even if we limit ourselves to non-communist countries, we can find no such generally accepted philosophy.

The librarians who have been writing in the last few years about the philosophy of librarianship are inclined to recognize these two

The author is Associate Professor, Division of Library Science, Indiana University.
major difficulties, agreeing that specialized libraries such as college libraries, those serving religious groups, or those serving populations in totalitarian countries will necessarily adopt the philosophy of the parent body but that public libraries in the free world can and should exercise their freedom by developing a general philosophy of librarianship. These librarians concede that it is perhaps impossible to find a universally accepted philosophical system which can be applied to librarianship, but they feel that a set of principles can be developed from a few basic ideas which enlightened librarians accept.

We must admit that philosophy cannot be considered as research if we define research as an inductive process based on experimentation, counting, or measuring. But philosophy may be included if we expand our definition of research to include all serious study which carefully considers the validity of data and reaches conclusions through the application of reason.

The few librarians who write on the philosophy of librarianship agree with each other as to the need for an organized philosophy, but they tend to disagree as to what it should be. This is to be expected because a person would have no reason to write a theoretical work if he were in agreement with the views expressed in the works of others. The fact that the body of literature on library philosophy is small may therefore indicate a state of agreement among librarians, but its smallness is probably also due to a disinclination on the part of librarians to think in general terms about the work in which they are engaged.

It is very difficult to review philosophical work briefly without being unfair to it. For a reviewer to state a philosopher's general conclusions without listing the steps by which he has reached them is almost as unfair as to divulge the name of the culprit in the review of a detective novel. All of the books and articles to be discussed in the next few paragraphs deserve careful reading.

Of the small group of librarians who attempt to write about the philosophy of librarianship, one of the most prolific and persuasive is S. R. Ranganathan, of India. His "five laws of library science," promulgated almost thirty years ago, are still being used by him and his followers as guides in the conduct of library affairs. They sound simple: (1) books are for use, (2) every reader his book, (3) every book its reader, (4) save the time of the reader, and (5) a library is a growing organism. However, the humanitarian theory of library service based on them is complex enough to deserve the name of a philosophy and should be of interest to western librarians.1–4

Two books by British librarians, A. Broadfield's A Philosophy of
Librarianship and Raymond Irwin's Librarianship; Essays on Applied Bibliography were published by the same publisher in the same year. Broadfield admits in his preface that in the field of library philosophy, "objectivity is difficult and certainty impossible" but goes on to present a carefully reasoned plea for the library as an agency which is centrally concerned with the preservation of the individual's right to freedom in the choice of reading material. The key to Irwin's book is in its sub-title. He sees librarianship as essentially a process in which bibliographical techniques and bibliographical knowledge are applied, so he sees little value in statistical research or the study of library administration.

An American librarian who, like Irwin, has been concerned about the bibliographical aspect of librarianship is the late Pierce Butler. He was primarily concerned with the role of the library as one of the agencies for the preservation of scholarship, which he defined as the system of ideas used by a culture to implement its traditional pattern of conduct, in other words, the intellectual content of a culture. Butler explored the relationship of libraries, scholarship, and civilization in considerable detail.

No American librarian has come forward to present a reasoned and extensive development of the theory widely held in the United States that the library should actively serve the ends of the democratic society. Perhaps a defense of this faith should be the subject matter of the next book to be published on the philosophy of librarianship.

This discussion of writings on library philosophy can be closed on a harmonious note because P. J. Madden, in a series of articles in the Irish Library Bulletin, has attempted to reconcile the social views held by many American librarians with the concern expressed by other librarians for the preservation of individualism. Madden believes that the explanation of the true function of the library is to be found in human nature which contains tendencies towards both social action and the preservation of the independence of the individual.

The study of the relationship of libraries to society and to government seems to be no more popular than the study of theoretical aspects of librarianship and is much less popular than the study of processes which take place within libraries. Perhaps librarians are not inclined to study matters over which they have little or no control. Or perhaps, because they are people who have been drawn to a profession involving small-unit operations (individual books for individual patrons), librarians do not find large-unit thinking a congenial occupation.

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However, there have been one or two recent studies which have described and commented on the external relationship of libraries. If the Public Library Inquiry is recent enough to be considered current research, then the Garceau report, *The Public Library in the Political Process* should be mentioned first. The author (a non-librarian, by the way) investigates the relationship of American public libraries to the local governmental units within which they operate and gives librarians some unpleasant but much needed facts about the present situation and how it can be improved.

The relationship of public libraries to American state library agencies is described in detail in the U.S. Office of Education publication, *The State and Publicly Supported Libraries; Structure and Control at the State Level*. It not only gives information about individual states but also presents concise summaries which describe the main types of state agencies.

Moving from research which describes the external relationships of libraries to research which describes and generalizes about a particular type of library in all of its relationships, we should begin with the most ambitious recent work of this type, L. R. McColvin's *The Chance to Read; Public Libraries in the World Today*. McColvin describes the condition of public libraries in many countries, and draws conclusions about the reasons for differences in adequacy of service. He writes lucidly about conditions and argues convincingly about problems and solutions.

Two other recent books each discuss many aspects of a particular type of library. The second edition of L. R. Wilson and M. F. Tauber's *The University Library* includes a large amount of recent material describing, generalizing and commenting about the function and operation of American academic libraries. W. R. Roalfe's *Libraries of the Legal Profession* does a similar type of job for a very special kind of special library. His book is based on questionnaire returns and interviews; but in addition to describing American law libraries as he has found them, he also tells what he thinks they should be.

Turning from research about libraries of the present day to research about library history and the biography of librarians, we come to the most popular field. There are many reasons for this popularity, but it is possible that two of the most compelling are the unquestioned respectability of history as a form of research and the relative manageable of the data. One or two European librarians who frown on other types of research about libraries are happy to write library
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history, and the beginner's errors in handling facts are not likely to be discovered if he builds his story on source material that is unfamiliar to his critics.

The amount of historical writing has not only been large in comparison with that of some other forms of library research but has also been increasing in amount lately, if the number of books, articles, and theses written about libraries and librarians of the United States is representative of the field as a whole. During the last ten years, between seven hundred and eight hundred pieces of research about United States library history and biography have been published or have been made available in some other way. Library Literature, the most helpful tool for the location of this material, lists about four hundred and fifty items issued during these ten years. Writings on American History is second in usefulness to Library Literature, but it lists publications for only four of the last ten years, 1948 through 1951. For those years there is some duplication between the two sources; but it is possible to calculate that if and when Writings on American History volumes are issued for the year 1947 and for 1952 through 1956, this bibliography will contain about three hundred items not included in Library Literature. The two sources together will include almost all of the literature on American library history which has been issued recently. Their lists of research published before about 1949 are noticeably shorter than are the lists of more recent material.

In discussing some recent examples of writing about library history and biography, it will probably be most useful to divide the subject matter geographically, taking up separately the writings about each country. If we start with general works, and take the largest of the general works first, then we should start with Geschichte der Bibliotheken, the third volume in the revised and enlarged edition of Mil- kau's Handbuch der Bibliothekswissenschaft. This monumental history of libraries is appearing in fascicles, seventeen of them so far, containing to date more than sixteen hundred large pages. In this revised edition, the history of the libraries in most of Europe has been brought close to the present date and the history of libraries in the United States is appearing now. Only a small amount of material remains to be issued. The revision of the sections in the new edition has been made in some instances by the person who wrote the original section and in others by a new author. The different sections vary somewhat in treatment, but the work as a whole will undoubtedly become the standard history of libraries.

Another general history, also a revision, but much shorter, is Vors-
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tius' Grundzüge der Bibliotheksgeschichte, a fifth edition of which appeared in 1954.\textsuperscript{20} In this latest edition the text has been changed in many places, but revision is most evident in the chapters about recent events.

A series of studies by Irwin in the Library Association Record has some international aspects, although the emphasis has been on the history of British libraries.\textsuperscript{21} Eleven articles have appeared since February, 1954. These studies are gracefully written, thoroughly documented, and exhibit a satisfying awareness of the social and cultural forces that have been so important in library history.

Before leaving the field of general library history, one other monograph which is extremely general should be noted. H. J. de Vleeschauwer’s “Encyclopaedia of Library History” which appeared in Mousaion, is not an encyclopedia in the usual sense of the word but is, in effect, an interpretation of the history of libraries which lists few dates, persons, and places but contains many thought-provoking observations about libraries and their cultural surroundings.\textsuperscript{22}

The habit of setting a library down solidly in its cultural surroundings has not been generally followed by writers of books published during the 1950's about American libraries. The way was nobly led by three fine histories published in the 1940's: Gwladys Spencer's The Chicago Public Library; Origins and Backgrounds,\textsuperscript{23} Sidney Ditilson's Arsenals of a Democratic Culture,\textsuperscript{24} and J. H. Shera's Foundations of the Public Library.\textsuperscript{25} Few writers have followed their lead yet here is an area where much could be done.

Several recent books about American libraries have been written with urbanity and have exhibited an excellent choice of fact and incident but have been little concerned with the relationships of such fields as education, architecture, or industrial development with library affairs. W. M. Whitehill, in the Preface to his lively history of the Boston Public Library, nods in the direction of general studies by Shera and others and promises that his book will be "purely an institutional history," a promise which he keeps.\textsuperscript{26}

Another recent history of an American library that is skillfully written is Harry Clemons' The University of Virginia Library, 1825-1950.\textsuperscript{27} Clemons seldom tells us whether events in his library were typical of those in other southern university libraries or whether his university library led or followed the others.

Perhaps we should not expect from the writers about individual libraries that their works exhibit a recognition of all the social forces which may or may not have eddied around their institutions. In the
case of Marion King's loving memoir of the New York Society Library, *Books and People*, we are likely to forget all about the forces because the people are so fascinating.28

Two books which are not about individual libraries but which cover relatively small areas in the field of American library history are J. A. Borome's *Charles Coffin Jewett* 29 and G. B. Utley's *The Librarians' Conference of 1853*.30 In both of these books, the authors have made librarians of a hundred years ago come to life. Much of this liveliness can be attributed to the authors' skill in describing the environment in which their men lived and thought and operated their libraries.

Although it is easy to forgive the historian of a particular library for ignoring external matters, we have a right to expect a person who writes on larger subjects to look more closely for causes and effects. C. S. Thompson's *Evolution of the American Public Library, 1653-1876* tells us something about the social and intellectual backgrounds of libraries but we may wish he had spent less time on the history of a few important libraries and had instead taken us a little farther into the complex relationships of social libraries, lyceums, and public education.31 Furthermore, he skips all too lightly over the years between 1853, when the first librarians' conference was held, and 1876, the magical year of the second conference. Something of the same thing has happened in K. J. Brough's *Scholar's Workshop*, a history based on printed materials about four American university libraries.32 It contains much useful information, but he could have told us more about the causes behind the events in his story if he had used archival material and had put more emphasis on the roles of educational theories and practices in the molding of American university libraries.

A recent study in which the author has ranged farther to find influences and to gather data is the A.C.R.L Monograph, *The Development of Reference Services through Academic Traditions, Public Library Practice, and Special Librarianship*, by Samuel Rothstein.33 Its author has brought together a large amount of elusive material and has presented it in a well organized pattern.

All of the books mentioned above have contributed significantly to our knowledge about American libraries, as have other books, monographs, and articles which cannot be included in a review of this length. It is worth noting that many of them, of which the Rothstein, Spencer, Ditzion, Shera, and Brough studies, are good examples, are Ph.D. dissertations. But we still need other large synthesizing studies about almost all periods of history and on many types of libraries. We particularly need studies on these subjects: (1) public and social li-
braries outside of New England and the Middle Atlantic states, (2) college libraries since the Revolution, (3) studies of special libraries such as law libraries and historical libraries which have existed in considerable numbers for over a hundred years, (4) studies of some periods of particularly luxuriant library growth such as the 1850's and the 1890's, and (5) almost anything about the complex events of the twentieth century.

If we compare recent writing about British libraries with recent writing about American libraries, we will find no startling differences. Perhaps, on the average, the British would receive a higher score on the matter of felicity of style; and, in the main, they have confined their attention more strictly to the last one hundred years. However, these differences may not be significant enough to deserve to be called trends.

Two books, taken together, give a clear account of the British public library movement since 1850. W. A. Munford's *Penny Rate; Aspects of British Public Library History, 1850–1950* is the more obviously general in coverage; but Grace Carlton's *Spade-Work; the Story of Thomas Greenwood* contains much information about several workers in the library vineyard even though it is mainly about Greenwood's work as a lay propagandist.

A significant contribution to the history of British university libraries is Sir Edmund Craster's *History of the Bodleian Library, 1845–1945.* The author brings the librarians to life and even manages to put some life into his accounts about important accessions. However, he seldom goes outside of Oxford's walls and seldom lets us know whether the events within the Bodleian had any connection with the curriculum or the scholarly work of the University.

Of the recent histories which have dealt with librarianship in countries outside of Great Britain and the United States, there is one which is likely to be of particular interest, E. A. Parsons' *The Alexandrian Library, Glory of the Hellenic World.* This is a large book about a large library, but the story is necessarily built on a small body of direct evidence. The author presents his evidence, discusses its limitations, and reviews it in the light of his broad knowledge of classical times before he draws his conclusions.

As we look back over the research which has been published in recent years about the "backgrounds" of librarianship, it would seem that the most successful work has recognized the importance of the background—social, cultural, or other—as well as the importance of the library itself. In looking forward, we can hope that writers in the
future will agree that these two elements should be shown as parts of the same picture. In the areas of library philosophy and the relation of libraries to government and society, research work has barely begun. In the area of library history much more work has been done, but a tremendous amount remains for scholars of the future.

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Research in Mass Communication

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The library is certainly not a mass agency in the sense that the term is commonly used. Why then should the librarian be encouraged to engage in research in the field of mass communication? The answer can perhaps best be seen if we look at a typical mass communication situation and try to define the library's role in it.

Let us suppose that the government wants the public to realize how important it is to take the Salk polio shots. A scholarly report on the subject could be issued by the Department of Health, Education and Welfare which would describe in detail the way in which the vaccine works to protect against infantile paralysis. The difficult style in which such a report is likely to be written would place definite limits on the effectiveness of such a report; most audiences would not be able to understand the medical jargon. The Department could consequently commission a feature writer to do an appropriate article for a magazine at the level of Harper's or Atlantic, and could also issue a "popular" version of the report for publication in the magazine section of a Sunday newspaper. To reach non-readers a television program on the subject could be written and spot announcements could be worked out for radio presentation. Each of these several versions would reach only a part of the total audience which the Department wishes to reach; and all of them will have to be used if everyone who should get the message is to have an equal chance to do so.

In this hypothetical situation most of the problems of mass communication are illustrated. If a larger and more heterogeneous audience is to be reached more channels and approaches will have to be employed, even when the message is not so serious or important. Now, the library is one of the more important agencies through which such messages are distributed, but in the example above, it will carry only one or two of the versions of the message which the Department wishes to disseminate. And these are likely to be the versions which will be used by the smallest of the several potential audiences. The implica-

Mr. Asheim is Dean, Graduate Library School, University of Chicago.
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tions of this situation for the effectiveness of the library as a social agency (What kinds of material should the library handle? What are the size and composition of its public? What is the value of the information it disseminates? Can other agencies do the job better?) constitute the problems of communication research which the librarian could properly investigate.

To keep this chapter within manageable bounds we shall be concerned here primarily with research problems having to do with the mass media. The media, as the term is used here, refers to the mechanisms of impersonal reproduction which intervene between the speaker (or writer or artist) and his audience. The mass media are those "instruments of communication which can convey identical messages to large numbers of persons who are often physically separated."¹ Such a limitation rules out face-to-face communication, which may be one of the most important aspects of all. But it includes motion pictures, radio, television, and the several materials of print, which are the media through which the individual or group with a message to convey can reach vast audiences impersonally and simultaneously.

Our interest in this chapter will be devoted to needed studies in the "sociology" of communication rather than in its technology. Problems of electronics and of technique, for example, will not be considered here. This is not to deny that it is important for the librarian to understand the genesis and the manufacture of the tools he uses, nor does it imply that skill in using them is unnecessary. But since research is our concern here, it seems useful to confine our attention to the areas where research by the librarian (not only in the academic laboratory but also in the field itself) can most fruitfully make a contribution. Ideally, of course, the librarian should know something about the organizational structure of the communication industry, the mechanical operations of the major media, and the arts of writing, speaking, play production, script writing, film editing, etc., which are necessary to using the channels of communication. Newly added to this list of skills is that of encoding for machines of information storage and retrieval—an aspect of the impact of the communications revolution upon the librarian which will be dealt with in the chapter on documentation. In most of these cases, however, other fields provide the facilities, the single-minded concentration, and the tradition of existing research in these areas with which librarianship cannot compete. Our unique strength lies in our ability to deal with the social impact of the several media, for it is with this that librarians are really concerned, whether they have always recognized it or not.

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For the kinds of problems which the library is best fitted to study two major approaches are probably most useful: content analysis and audience research. This will not be the kind of audience research to which the communication industry has so assiduously devoted its energies. The statistics about audiences have been, and continue to be, compiled in great detail by those who control the major media, and need not occupy much of the librarians’ time. Actually, most of the original work of counting noses was done by the librarians about twenty to twenty-five years ago, and the patterns they discovered have been altered almost not at all by any of the subsequent large-scale censuses and polls. Much of this pioneering in audience measurement merely utilized the records normally kept by librarians as part of their daily routine, and we can still, without too much difficulty, keep tab on the total number of books we circulate, the total number of people who took them out, the total number of people who ask reference questions, or listen to recordings, or read magazines and newspapers within the library itself. Outside the library the other agencies keep similar statistics, and the number of television sets in operation, the number of theatre tickets sold, the ratings of audience attention to individual radio shows, the circulation of magazines, and the number of books published and purchased can be discovered with comparatively little effort.

But the gathering of statistics is only the beginning of the kind of audience research in which we are interested. We want studies which will tell us not just about the size of the audience, but about its reactions. This is the sociological and psychological side of audience research; research which will need to use a great number of disciplines: psychology, education, economics, human behavior, the several arts, and many more. We shall be turning our attention to the individual reader-listener-spectator rather than the statistical mode; and we shall be concentrating on the content of the media, rather than on their technology. Statistics are important, of course, because we shall be interested to know how representative our individual is; and in some cases there are still some basic over-all figures which need to be gathered before we start to study the sub-samples. Technology, too, will be important to us on occasion because it imposes restrictions upon content. To the extent that they throw this kind of light on our problems of the sociology of communication, we shall have to take cognizance of quantitative methods and technological development. But mainly we shall be concerned with a kind of psychological probing which will use the insights that come from our years of working with

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books and the people who read them. For it is here that the librarian has a special knowledge which no other group of investigators has.

The analysis of content is carried on by librarians every day, in almost every aspect of their professional work. Book selection, the evaluation of reference tools, descriptive cataloging, classification, the writing of annotations for reader guidance, the selection of newspapers for clipping—all of these and many more standard library procedures are based on a more or less intensive analysis of the content of library materials. Yet content analysis as a research technique is seldom used by librarians, although it could provide valuable information about some of our most pressing problems.

What content analysis provides as a method is the objective, systematic, and quantitative discipline which is missing from the impressionistic surveys typical of daily practice. Most of our reviews, annotations, and impressions do not provide the kinds of solid descriptive data available from content analysis. If we had such accurate and detailed information we could begin to establish generalizations about the content that would be more broadly useful.

The resistance of librarians to the quantitative aspects of content analysis is understandable, and certainly it is true that some of the content studies in the past have been unimaginative tallies of numbers. But this results from a misuse of the technique; it is not inherent in the technique itself. On the other hand, some frequency counts can be very revealing in themselves, although usually as the materials grow more subtle and "literary," the less useful a purely quantitative analysis will be. The informed analyst knows this, and makes adjustments accordingly. No research method can be used as a substitute for judgment and insight; it is employed to provide the necessary data, interpretation of which will call judgment and insight into play.

A few content analysis studies now exist which illustrate some of the useful descriptive tasks to which the technique can be applied. Many more are needed which will describe more accurately the state of the literature in many subject fields. Over a period of time what trends can be traced in the way that different subjects are treated in the several media? What changes have occurred in the presentation of minority groups, or labor problems, or international affairs, or the role of science in society (the possibilities are endless) in books, magazines, newspapers and on the screen, the air, and the television tube? This can be of very great value to the librarian in many ways; for example, an accurate description of the changing boundaries between the sciences (chemistry and biology, for instance) could help deter-
mine appropriate departmentation in a library, with implications for book buying, building plans, subject specialization on the staff, etc.

International comparisons, rather than time comparisons, might also prove enlightening. How does the treatment of a given topic in the foreign press compare with that in the American press? What problems are emphasized in the books of another country as compared with those issuing from our own presses? What proportion of foreign publication is translated into English, what particular fields and viewpoints find their way into reading to which Americans have ready access? What areas are being lost to the American reading public if publications from other countries are not included in our collections? And what impressions do other countries have of America, if they do not have access to our publications?

Comparisons between the several media can be made in the same way. What subject areas are treated adequately only in books or other printed media? What subjects are treated in other media which print does not cover? Here again there are implications for the library and its collection of materials, once a really sound and dependable description is available.

The comparative analyses of content give promise of providing some of the most valuable information for communication study at present. The comparison of the several media, for example, is particularly pertinent in view of the increasing concern librarians and educators feel about the competition to reading represented by the films, radio, and television. Because of his vested interest in the book, the librarian makes many claims for the superiority of the book over the other media in terms of depth of analysis, subtlety of interpretation, scope of coverage and other aspects which seem to be important. How much do we really know about this? Can we compare the content of a book about orchestral conducting with the Omnibus program on television in which Leonard Bernstein discussed the topic? A description of the content of the two would have to take into account supplementary visual and musical content—and the personality of Bernstein himself—which no book could contain. Does the book have other, equally important things to offer?

If the librarian is to continue to promote the book rather than other media, he should be able to say what the advantages and values of the book are. His choice should be based on a sound judgment concerning comparative effectiveness. And this he can make only when he has the data from a good comparative content analysis.

Equally promising as an area for research is the comparative con-
tent analysis within a single medium. This is particularly applicable in the field of print where the range of appeals can be so wide and the number of different audiences to be reached can be so diversified. A long-standing problem for public librarians, for instance, has been that of finding good "readable" materials on subjects of significance to the adult reader with limited reading ability. To meet this need, readability formulas have been devised, popularizations have been written, digests have increased, and a welter of other attempts to reach the reader at his own level have been introduced. In the example of the Salk polio shots information cited above, we have seen how this drive towards popularization operates. The big question for the librarian has to do with the accuracy, completeness, authenticity, and reliability of the materials in the popularizations. What content is lost when a ten-page article becomes a three-page digest? Are ideas necessarily watered-down or distorted because specialist jargon is translated into the vernacular? Can difficult concepts be presented in language which is not difficult, without misrepresenting the full complexity of the concept? These are questions which should be answered by the librarian whenever he selects a popularization for his collection, and whenever he recommends it to a patron. Comparative content analysis is the only method available to us to pin down precisely what is retained and what is lost; what is altered and what is kept intact between the original scholarly presentation and the popular one. If enough such studies were made, it might well be possible to establish a set of criteria concerning popularizations which could be used as a guide in the evaluation and selection of such materials for different libraries and different patrons.

There is a final, peripheral value in the use of content analysis by the librarian. This is its "disciplinary" benefit, which forces the librarian "inside" the content in a way that his usual reading and his usual impressionistic analysis do not. The frequency-count, mundane as it may appear, often opens up new aspects of a book even to the habitual book reader. The comparative analysis of one book with another soon reveals recurring patterns which a single reading would not uncover. And this provides a better insight into the cumulative effects of reading about which we know little today, but about which we will have to learn a great deal if ever we are to deal accurately with reading effects. Content analysis therefore is not only useful as a research method for adding to the general sum of factual knowledge; it can also be of value to the individual librarian by giving additional dimensions to his own reading experiences.
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Content analysis is seldom undertaken for its own sake. Our interest in having a more accurate and reliable description of the content of any piece of communication lies in what that description can reveal, either about the probable intent of the sender or its possible effect upon the receiver. The intent of the sender is of particular importance where any social responsibility falls upon the disseminator of the message, as it does in the case of the librarian.

It is a point of pride with the American librarian that his library's collection is a balanced one. This is not a matter merely of a wide range of subject matter: something on all topics. It is a matter too of a wide range of viewpoints: all sides of each topic, and all facets of controversial issues. The librarian does not attempt to rule out biases per se, but to maintain an equal opportunity for many biases to find expression. Such an ideal requires that the librarian know what his collection contains, and what the biases are. A perfect balance is probably not possible because the available literature and the comparative value of its several parts are not themselves in perfect balance. It may not always even be desirable to maintain a perfect balance: an equal number of books proclaiming that the world is flat to balance the number which claim that the world is round, for example, is not the librarian's ideal. But he should know the nature of the special viewpoints represented on his shelves; he should be able through advice and guidance to help the reader to weigh one side against the other to establish his own particular balance; and certainly he should be proof himself against the emotional rather than the rational presentation. Identification of intent through studies of content can help to give him the knowledge he needs to perform this kind of service.

The basic assumption underlying the use of content analysis to identify the intentions of the communicators is that a definite relationship exists between the characteristics of the communication itself and the characteristics of those who produce it. Generally speaking, most of us probably accept this assumption, but attempts to find data to support it have more often than not proved somewhat less than satisfactory. In certain obvious cases, the connection is quite clear: a headline in the Chicago Tribune proclaims DEWEY WINS! when, as a matter of simple fact, he lost. This tells us a good deal about the bias of the publisher and the extent to which wishful thinking outran the facts in the case. But most content is not so overtly revealing, and it is in these less-than-clear cases that a measurement of intent is most needed.

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The kinds of study which have been most successful to date are those which help to identify the methodology of the propagandist. A. M. Lee's study of the speeches of Father Coughlin resulted in the establishment of an inventory of propaganda characteristics in any piece of verbal argument. More studies which would provide similar generalizations applicable to the analysis of writing are needed. Propaganda analysis has established itself as an acceptable technique, but the more subtle kinds of special pleading which are not out-and-out propaganda will require much more refined techniques of analysis. The librarian has need of a tool for identifying the intent of the writer when that intent is not proclaimed. Through the analysis of obviously slanted materials he might well be able to create a measuring stick for the discovery of intentional bias in less obvious materials.

Another place where comparative content analysis may be used to reveal intent is in the study of popularizations. The popularization technique automatically imposes selection and restatement upon source materials and may thus cover up under the guise of simplification deliberate distortion of the original. But where the investigator has both the original statement and the revision of it, he can study what kinds of things are omitted, what kinds of things are added, what kinds of restatement occur. These are revealing data for an analyst interested in the probable intent of the communicator. Many studies of this kind are possible; the data lie ready on the libraries' shelves to be mined by the student of communication.

In any study of the communication industry, the concentration of control is also a source of considerable concern. The concern derives from the question whether such concentration actually causes an imbalance in content; that is, whether the point of view of the "ruling" group of producers finds expression to the virtual exclusion of any other points of view. Such a question can be raised only if the basic assumption mentioned at the beginning of this section is accepted: that the characteristics of the producers will color the content they produce. Any student of communication should be interested to discover the extent to which this belief is actually supported in fact: are there groups in our society who have inadequate access to the channels of communication because they are not among those who control the channels? An analysis of content will reveal a great deal about this, and by bringing more graphically to the attention of the librarian the areas in which representation is weak, help him to redress the balance in his own collection by more careful selection. "Who says what to whom" is a major part of any communication study, but the
"who" and the "what" have to be seen in relation to each other if the identification is to be really meaningful.

The identification of the "to whom" is also important for the librarian, and it is here that the techniques of audience research come into play. In a general way, we have a pretty good idea who the reader is.7 More studies which will merely corroborate this generalized picture are useful on occasion to correct for changes which may have come about through changes in the communication picture itself. The astounding growth of television in this country, for example, has undoubtedly had some effect on the amount of reading, of film going, and of radio listening. Has it changed the characteristics of the reading audience as well? Or are the better educated still probably the ones who read, even though the amount of total reading they do may have been slightly reduced? It might be useful to re-do some of the reading studies of twenty years ago just to be sure.

Much more useful, however, would be more intensive case studies of particular readers—and especially of those who do not fit the pattern already identified as typical. Who are the well-educated, upper-middle-income, professional men who do not read? Who are the readers—every library has many of them—who seem to have none of the characteristics which correlate with reading? An intensive study of the hows and whys in such instances would tell us a great deal more about what leads people to reading, or what deters them from it, than the over-all figures we now have which tell us merely that a person with a college education is more likely, all things being equal, to read more than someone with only a grade school education. What we want now is a study in depth of interests and motivations. This can not be based on a single question in a cross section poll of the entire population which asks, "Why did you read this book?"

We also want studies, equally intensive, of the users of the other media, and most particularly of the book readers who are users of the other media. Television is still new enough, and still growing rapidly enough, to make us want to know something about the extent to which it has cut into reading, and for whom, and for what kinds of content. The library's users are a good segment of the reading public to study in this connection, particularly where records of library use before and after TV purchase can be had.8 Librarians have reported their impressions about this and readers have been asked to guess about it, and educators have aired their undocumented views. What is needed now is the documentation.

Why do we wonder whether the message has been altered in its
transmission from scholarly to popular presentation? Why are we concerned that children are more readily reached by television than by books? Why do we care whether adults now read digests instead of the complete original work? What difference does it make if the book is neglected by those who have seen the movie? What does it matter that only a small proportion of the total adult public is capable of reading a sustained and detailed analysis of a social problem? In every case our real interest is in the effects of the communications upon the audiences they reach.

Underlying all library activities is the assumption that the library patron is affected by the materials which he obtains through the library. All library book selection, for example, is based on our guesses about effects: we select books which will help our readers to gain information, or entertainment, or aesthetic pleasure, or background knowledge. When we reject, it is again in terms of effects that we do so: the book will not provide sufficient information, recreation or knowledge to warrant the expense; there are other books which carry the same message more effectively; the information contained therein is faulty or distorted and thus will presumably have an undesirable effect upon the user. The librarian's particular skill is demonstrated by the accuracy with which he can predict the effects which his library materials will produce upon the users of them. And the librarian's constant battle against censorships is based on his belief that some effects are more important than others, and his disagreement with the censoring groups about the alleged effects to be anticipated.

Yet oddly enough we have almost no really solid information about the effects of reading or of any of the other media of communication. A few small scale studies have been made 9-11 which demonstrate that some effects can be produced under certain artificial conditions, but no generalizations can be made on the basis of their findings. A few studies in the realm of political behavior have been made 12-14 which make the first steps toward the more basic understanding of the role of print and other communications in the voters' decision-making. But the librarian should know a great deal more than he does about the effectiveness of different kinds of printed materials, and of the effectiveness of print as compared to other communication media, and of the audiences who are most and least affected, and by what kinds of content. Here is a fertile field for some case studies of library users.

The study of effects is a complex task, calling upon a great variety of skills and backgrounds. Many studies will have to be undertaken,
each of which will contribute only a small part of the kind of knowledge we hope to gain about the subject. But many of these parts can logically be undertaken in the library. Through the readers’ advisor and other staff members who work directly with patrons, it is possible to learn a great deal about what different people like and do not like, remember and do not remember reading, with whom in their reading they identify and whom they reject. Such information can be extremely revealing yet we have done very little with it. Much of what can be done by the practicing librarian in this area will have to be surface and suggestive rather than intensive and definitive. Nevertheless, he can make an important contribution if he does nothing more than suggest productive hypotheses and identify useful lines for more intensive research. Ideal laboratory situations for such studies exist, in particular, where bibliotherapy experiments are being tried in hospitals and other institutions.

In the discussion of content analysis, reference was made to the comparison of, as an example, the Omnibus program about orchestral conducting, and a book on the same topic. There the emphasis was upon the content per se: what is included and what is omitted. But the comparative “effectiveness” of the two media was inevitably part of the discussion as the logical next step in the investigation. In other words, we move from the content, to the audience reached by the content, and we are concerned with what the audience “gets” from its exposure to each of the media. Clearly a description of the content is not enough in itself if we are interested in audience reaction. An objective description of content does not tell us what will be perceived, for what will be perceived is part of the total personal and social situation and not merely, or even primarily, a matter of content alone. For the individual situation the study of content must be supplemented by personal interview and intensive case study.

Our easy generalizations about the comparative effectiveness of the book and the other media may be quite wrong, particularly for audiences of younger people who have grown up with the newer media rather than with the book. Just as the person capable of critical and analytical reading finds so much more in a book than does the casual reader, so the initiated user of the other media may also be capable of taking more from these media than the book-oriented analyst may anticipate. The generation of television viewers and film goers may have developed skills of reading between the lines as it were, of interpreting the conventional symbols of the media, of assimilating more than the surface content. Content analysis supple-
mented by intensive interviews with the users of the media analyzed may open new possibilities concerning comparative effectiveness which could alter considerably our present book-biased conjectures.

In dealing with the comparative analysis of the several media, there is another problem of effects which is more difficult to investigate, but certainly just as important to face. This is the question of how the use of one medium affects the use of another. The question is being raised constantly by anxious parents and educators as it concerns the relation of TV viewing and book reading (in an earlier day it was film going and book reading). It is a commonly held view that addiction to radio, films, and television in youngsters may lead to mental laziness; that it may affect them like a stimulus which has to be administered in larger and larger quantities to produce the same kick. If this be so, what happens to the ability of the book to reach the child after he has been stuffed with a diet of science fiction, crime stories, and similar television fare? Can *Childlife* compete with *Life*? Can Hans Andersen be heard over Alfred Hitchcock? Can a child imagine any Cinderella, or Pinocchio, or Alice in Wonderland other than the one Disney has already supplied, complete in every detail?

While this kind of question has most frequently been raised in the area of the children’s reading, the same kind of question applies to adults as well. Does a diet of digests make one incapable of swallowing heavier fare? Does the more-heat-than-light approach to serious problems on the air make the serious analysis of problems too deep for the average TV owner to undertake? Is the purely factual approach to knowledge which underlies the quiz programs destroying the individual's ability to reflect, and therefore his ability to use serious printed matter?

These are extremely important questions, particularly in a democracy where majority opinions can shape public policy. If it can be shown that for some people, oral presentation is more effective than print, and visual presentation more effective than either, the implications are far reaching. They touch every aspect of communication and every corner of society into which some kind of communication reaches.

It can readily be seen therefore that the problems outlined in this chapter are not of concern to the librarian alone. They are problems for all students of society, and many studies seeking data related to the questions raised here will be undertaken by social scientists in the many branches of their discipline. In suggesting that the librarian also attack some of these problems, the present writer is reaffirming his
belief that the library is an important social agency—perhaps one of the most important—in the fields of education and communication.

RESEARCH ON ADULT READING*

The field of reading has been studied in many different ways. All the investigations have something of interest to contribute to the librarian, whose major stock in trade is still books even in this audiovisual age. This report assumes, however, that the most pertinent studies are those which are concerned with the “sociology of reading” and which address themselves to the question: “Who reads what, and where does he get it, and how does it affect him?” On these there have been comparatively few efforts at research; we have much to learn about each of the aspects: the “who,” the “what,” the “where,” and—most important—the “how does it affect him?”

The first scientific studies of reading, which began to appear in the middle of the nineteenth century, addressed themselves to a different set of problems. They were concerned with the reading act as a physiological process—the charting of eye movements, the noting of pauses, the study of blinking or lip movement or span of attention, as related to reading speed and comprehension. By the second decade of the present century the scientific findings of these psychological and physiological investigations were applied to the question of efficient pedagogical method—to the refinement of reading tests, to experimentation in teaching techniques, and to the exploration of reading readiness, speed, growth, and skill in relation to the physiological processes connected with the reading act. There was the beginning of interest also in the so-called “hygiene of reading,” which experimented with the effects on reading skill and fatigue of different colors of paper and print, various sizes and kinds of types, and various methods of spacing and determining margins. It was not until 1930 that the students of reading began to explore its social role and its connection with the purposes its serves.

The earliest studies of the sociology of reading were concerned with the general rather than the specific aspects of the problem. We were interested in gaining some basic knowledge about readers and reading in broad terms, in knowing something about the averages and the norms before turning our attention to the individual and his place in the total picture. Thus we saw the importance of describing the “who”

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in the basic question, but identification of the reader was stated in terms of the characteristics most readily ascertained objectively. We were able to reply in census-like terms to such questions as: How do readers differ from non-readers? What are the characteristics of the persons who read? Who is more likely, in any community, to be the customer of the bookstore, the borrower from the library, the user of the several media of print? Sex, age, education, occupation, and marital status have been the variables most frequently studied—variables which can be identified quickly in a personal interview or checked easily on a questionnaire.

Within the limits thus imposed, we now have a fairly accurate if generalized picture of the reader. We know that education is the most important influence on reading behavior no matter what the sex, age, or economic status of the reader; we know that the younger adults read more than the older ones; we know that the upper middle income groups read more than the lower income groups; and we know that women are more likely to read for recreation, and men are more likely to turn to reading for professional and vocational reasons. These facts have been gained from study of readers in many different contexts—we have investigated cross sections of the general population, whether they were readers or not; we have turned our attention specifically to known readers (users of the public library, for example); we have studied the users of the several different media, not only those of print; and we have concentrated on specific occupational or educational groups. No matter how the question has been approached, the same general findings have resulted, and we can state with some certainty that our general picture of the reader is a reliable one. Thus, to say that we probably do not need many more studies of this aspect of the problem is not to denigrate the fine work already done in this area; it is a recognition of the solidity of the contribution already made, which renders it possible for us to go on from there, building upon the groundwork already laid.

The "where" studies have taken a similarly generalized view. Studies of sources have been of two kinds: (1) examination of the "geography" of distribution agencies on a national, regional, and community basis, and (2) investigation of agencies by types—the bookstore, the public library, the newsstand—as general sources of reading materials. As from the studies of the reader, some basic general knowledge has been gained from these scrutinies of sources. We know, with reasonable assurance, that the public library and the bookstore are the two major suppliers of books for adults, and that the way of second importance
in which adult readers get such materials is to borrow from the collections of their friends. Also, we know that the city reader is more likely to have access to the varied stock he wants than is the reader in the rural area, and that almost invariably the person who is well served by one of the agencies will be well served by the others. The studies of specific agencies have dealt mainly with gross figures of use, while those of the “geography” of distribution should be recognized as concerned with potential rather than actual reading, showing what the maximum utilization could be for each type of agency in each kind of community and region, but not whether actual use has been made.

The investigations of what is read have been a little more specific, but again the kind of data which can most readily be gathered tends to be general. The “what” studies have been concerned with the form of the material more than with its content; our most reliable figures can provide us with comparative data on the reading of books, magazines, and newspapers as kinds of media, or, at best, with general breakdowns of the book materials into such broad categories as fiction and nonfiction, or the broad Dewey decimal classifications. Assumptions about quality are often made in such studies; fiction is considered less “worth while” than nonfiction, for example, or books more “important” than magazines, but it need hardly be pointed out that their validity is limited. To determine quality the investigator must get “inside” the book or article and make an intensive analysis of the content.

But even when the investigator does this, the objective research methods he employs usually keep him from a very deep analysis of content. The most prolific contributions in the content analysis field have been the studies of “readability,” of which the works of Rudolf Flesch are perhaps the best known. Such studies are not concerned with the quality of the ideas or information contained in a given piece of writing; they are directed toward an analysis of the ease with which it can be read, quite apart from the value to be gained from such reading. Few would deny the importance of gauging the level of difficulty represented by different kinds of materials; certainly the librarian is well aware of the problem of finding those which deal with adult subject matter in terms which the average adult can understand. But the social role of reading is not adequately defined without some analysis of the value of the reading done and some interest in the effects. And there is a growing suspicion among students that indiscriminate reliance upon readability formulas to guide the writer may well alter the social role of reading in undesirable ways.
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Thus far, in treating the generalized character of the reading studies, we have treated the investigations of the question—Who reads what, and where does he get it, and how does it affect him?—as though they dealt with each aspect separately and in a vacuum. In actuality, even the most coldly objective efforts have attempted to combine the characteristics in meaningful ways. Thus, readers have been identified not only as readers per se, but as borrowers from the library or users of the bookstore (who and where). They have further been examined in terms of materials: What are the characteristics of the borrowers of fiction from libraries as opposed to buyers of fiction from bookstores, or how do library users of fiction differ from library users of nonfiction (who + where + what)? Such a combination of factors leads to a concern with reading interests and motivations: What do different people want to read about, and why?

Again, the early studies of interests were made in general terms; D. Waples and R. W. Tyler deliberately addressed themselves to group characteristics, and established a strong correlation between them and stated reading interests. They found that the more characteristics that two or more groups held in common (for example, age, sex, occupation, and education) the more likely they were to check similar reading interests on a list of possible magazine articles. But once this was established, a new question arose: Do people actually read what they say they are interested in reading? Waples and Leon Carnovsky combined the analysis of the checklist of interests with a report on actual reading and found that subject interest in itself is not enough; that people read in line with their stated interests only when the material is readily accessible and easy to read. The old assumption, basic to most studies of reading interests and preferences, that what people read is a key to the subjects in which they are interested, seems pretty effectively disproved. Accessibility, then readability, and only then, interest, are the factors which lead people to read the specific things they do.

The cumulated knowledge gained from the several types of studies described above leads naturally to an interest in the effects of reading. What difference does it make whether magazines are more widely read than books; whether women read more fiction than men; whether people read the accessible book instead of one in which they say they are interested? The difference it makes has importance only in terms of the values received from different kinds of reading and the influence, recognized or unknown, which a particular type of printed matter has upon those who see it.
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Until recently none but the literary critics had the temerity to make value judgments about the content of written materials; and while their analyses have a long and respectable history in the field of literature, they lack the kind of so-called "scientific" objectivity which the social scientists have attempted to make the criterion of valid research. Thus the adventures of the critic's soul among masterpieces, revealing as the record of them may be, have not pretended to be the systematic, objective, and quantitative content analysis which social scientists demand. This does not invalidate either literary study or social science research; it merely underlines the difference between the objectives of the two kinds of investigation.

The extra-literary studies which attempt to control, as far as possible, the reliance on impressionistic and subjective judgments, have thus far been extremely limited in the field of motivation and effects. Motivations can hardly be studied without going to the reader himself, and the reader seldom knows why he reads a specific book at a particular time. The reasons he gives are often superficial or stereotyped; he is very seldom aware of the accessibility factor as a motivating force; and he often isolates a single influence when in reality his reading probably resulted from an opportune confluence of many influences.

He knows even less, of course, about results. Occasional mention is made in biographies and autobiographies of the life-changing factors in a book, but these are more interesting than convincing. Few of us can cite an instance in our own experience when a single reading caused a sudden and decisive turn of mind, and the question arises whether such an influence was ever actually felt in that way, or whether it merely makes a striking story. A superficial analysis of one's own reading behavior leads to the hypothesis that effects are cumulative; that no one occurrence but a lifetime of reading forms the opinions and attitudes that we possess; and that the dramatic moment of change and revelation comes because we have been building up to it through all the exposure to ideas in books and other media which have preceded the specific reading. The results are not denied, but the pinpointing of the moment at which an effect appeared is difficult.

Some outcomes of reading can be established. The effectiveness of reading done for an instrumental purpose, as when one follows recipes, instructions, and guides to specific behavior, can be demonstrated by putting the instruction into practice. A successful cake, or birdhouse, or homemade dress produced on the strength of recorded directions furnishes evidence that the maker read and understood. The comprehension of reading done for school assignment also can be measured by the assimilation of specific factual content. In other words, reading
which leads to an overt act or to the memorizing of an objective piece of information is most susceptible of investigation.

The leading sociological studies in this area have centered in the effects of reading and other activities of communication upon political behavior mainly because in the act of voting we have tangible evidence of attitude and interest which can be traced to written and spoken sources. From such research have come data pertinent to an understanding of both effects and motivations. We have learned that readers of political materials read in line with their predispositions, that they select the arguments which support established beliefs, and that they are most likely to remember and accept the points which occur most frequently. We are limited, however, in the extent to which we can transfer such findings concerning the deliberate reading of specifically "propagandistic" materials to the area of more subtle effects. Remembrance of Things Past is not campaign oratory, and its influence is not reflected in a specific act, like voting, which can be observed at a definite time and place. Nor does the reader of Proust, or Tolstoy, or Mann, or Hemingway consciously turn to such literature in order to change his mind or to reinforce particular opinions already held. Yet his mind may be changed without his becoming aware of it; and it is this kind of reading, which broadens one, makes him more capable of understanding, gives him wider horizons, or sharpens his awareness, toward which the present-day researchers would like to turn their attention.

As a consequence, the reading studies of the immediate future are likely to turn more and more in the direction of the individual case study and the analysis of subjective factors. The general ones will continue to be useful for keeping background knowledge of the subject current, but the basic facts have now been established; and only when statistically significant deviations appear will it be necessary to multiply corroborative studies. Present interests lie, not so much in the modal reader as in the "sport"—the man with little education who reads widely, the well-educated nonreader, the opinion leader, or the influential member of the community who must be regarded as a special reader rather than a typical one. There is a growing interest, too, in more subtle uses of content analysis for what it can tell us about probable effects on different readers. In other words, we are ready to study the specific reader either in the very act of a particular reading, or through an analysis of all of his reading over a period of time, in order to follow through on the implications for his behavior, attitudes, and personality development.

These are ambitious aims, and their attainment will not come easily.
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But their value—to educators, social scientists, and students of communication—is great. The librarian, who is a little bit of all three, should be particularly interested in the results. While he may feel intuitively that his social function is a vital one, he is often hard put to find objective data to support his belief. If he could learn something about the social role which reading plays, about the effects which different kinds of reading have upon different kinds of people, about the needs which books alone can satisfy, about the kind of people most affected by reading, he could perform more efficiently the important role in society which should be his but which now—too frequently—seems unattainable.

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ADDITIONAL REFERENCES


Research in Organization and Administration

EDWARD A. WIGHT

The term administration is usually used with an inclusive meaning, to embrace all of the activities having to do with the use of manpower and materials to attain the objectives of an organization or institution. Organization—the grouping of work into operating units (i.e., departments, divisions, sections) and the establishment of lines of authority for supervision and other controls—is one of the aspects of administration. Planning, staffing, coordinating, directing, budgeting, and reporting are other terms frequently used to describe specialized aspects of management or administration. All of these areas are subjects worthy of continuing investigation.

The literature of administrative organization is replete with maxims or principles of administrative organization. Some of these proclaim that administrative organization should provide for unity of management, a limited span of control, delegation of authority commensurate with responsibility, a hierarchy of positions, relatively few levels in the hierarchy, grouping of employees on the basis of homogeneity of activity, both line and staff functions, and facilities for coordination. Somewhat less frequently quoted principles are: delegation of authority should be as far down the line as is possible; delegation of authority without adequate controls is irresponsible management; and the responsibility of higher authority for the acts of its subordinates is absolute.

Considerable difference is attached by different writers to the usefulness of formulations of principles of administrative organization. While most of the textbooks and many articles refer to them as principles to be considered, there is little or no suggestion as to the relative weight to be attached to any principle; or to the procedure to be followed when principles conflict. The principles seem to be useful in rationalizing a particular administrative organization. One critic says:

The author is Professor of Librarianship, School of Librarianship, University of California at Berkeley.
"It is a fatal defect of the current principles of administration that, like proverbs, they occur in pairs. For almost every principle one can find an equally plausible and acceptable contradictory principle. Although the two principles of the pair will lead to exactly opposite organizational recommendations, there is nothing in the theory to indicate which is the proper one to apply." 1 Furthermore, rarely if ever is a single basis of administrative organization consistently followed in the main divisions and also throughout the various subdivisions of an institution.

Span of control has been widely discussed in reports on organization and in surveys of administrative organization. The size of the span of control of an administrative officer is affected by such factors as the abilities of the officer (knowledge of operations concerned, speed of work, ability to change rapidly from consideration of one problem to another), the nature of the work supervised, the number of personnel in the operating units, the level in the hierarchy, the geographic location of the units supervised, and the stability of the organization. These factors lead to such generalizations as that, other things being equal, the span of control varies directly with the ability of the officer and the stability of the organization, and inversely with the complexity of activities, the size of the operating units, the level in the hierarchy and the scattering of the units geographically. The testing of the application of any of these factors to library situations is eminently suitable for research and study.

Another of the major topics of discussion in library literature on administrative organization and equally worthy of study is the basis of departmentation. Among the bases of departmentation are: function (acquisition, circulation, reference, etc.), activity (order, repair, extension, etc.), clientele (children, adults, undergraduates, etc.), geography (branches), subject (fine arts, history, technology, etc.), and form of material (serials, audio-visual, documents, etc.).

The work of Frederick Taylor, Frank Gilbreth, and many others focused attention upon efficient methods of performing work. These are still fruitful avenues of investigation, and the present emphasis upon "work simplification" is evidence of continuation of these lines of inquiry. With the publication of the Hawthorne studies a relatively new emphasis in the study of administration developed. Much of the emphasis in investigation was shifted from work and its organization and management to the worker. "Human relations" broadly describes the emphasis that is currently being placed in much of the research literature of administration. The effort is to find the optimum con-
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ditions under which people work effectively. Supervision, morale, and communications are some of the terms frequently found to categorize these relatively new fields of research in administration.

"Social scientists have been contributing more and more to our understanding of leadership and the behavior of people within formal organizations," begins the foreword of a recent brief survey of research findings. The bibliography of this report lists 153 books, pamphlets, periodical articles, research papers, and technical reports, and five bibliographies bearing imprints 1953 and 1954 and running from nineteen to ninety pages.

Since an administrative organization exists only to contribute to the attainment of the objectives for which the library exists, it seems reasonable to assume that necessary steps in investigating the effectiveness of library organization are to formulate precise statements of objectives of the library or libraries being investigated; to examine the activities which contribute to the attainment of the various objectives; and, finally, to attempt to find some objective measures of the contribution of various activities to the stated objectives.

While lines of inquiry into the attainment of objectives which are stated as value judgments may yet be developed, the present writer is not aware of any significant research development along these lines in library literature. For factually stated objectives the concept of "efficiency," defined in terms that relate the input of energy (as measured by manpower in terms of man-hours) to the output of measurable product (meaningful units of work) seems to offer some possibilities for research.

In applying the "efficiency" concept it would seem to be a valid assumption that the administrative organization which produces the largest output of a desired product of the same standard of quality with the least input of manpower and materials (and at the lowest unit cost), while maintaining desirable standards in the use of human and other resources, would be the most desirable. Other related assumptions are apparent. For example, if a change in administrative organization, with the same input of manpower and materials, while maintaining desirable standards in the use of human and other resources, produced a product of higher quality at the same cost, this changed organization would seem to be superior to the former one.

The term "operations research" is one of several terms applied to the type of research in administrative organization and management which formulates alternative choices, and for each makes projections of the input and cost of manpower and materials and the output of
work of defined standards. The purpose of this type of administrative research is to provide management with the tools of administration which facilitate the selection of alternative means of achieving defined objectives. Data of these types will obviously be pertinent only to the particular institution and its own operating procedures. If and when institutional objectives and their resulting operations and products are standardized, such research findings may be directly applicable among institutions.

A recent report which seems to make a substantial contribution to the literature of library management, and which uses some of the approaches suggested in the foregoing paragraphs, has been published by the City of San Diego. An example of the method used in the study of circulation work will suffice to illustrate the approach. On the basis of time studies of circulation it is estimated that the use of a different work procedure would make an annual saving of 12,834 man-hours of clerical and subclerical time, or a total saving of $24,087. "In addition, 2,139 professional hours in the branches would no longer be devoted to clerical duties but would be available for other professional service to the public." This saving is offset partially by the cost of new equipment, which ranges annually from $9,800 to $11,350, depending upon differences in the cost of rented or purchased equipment and the method of charging depreciation.

An example of the application of the principle "that duties be performed by the lowest salaried employee capable of performing them adequately" is given, where the estimated cost of performing a simple process by each of four levels of classified employees ranges from $8,567 to $22,008 per year. The report adds, in this connection, "The results of the measurement study can and should be used to weigh the economic value of many other duties in the library."

A study previously reported in Library Trends shows the estimated cost of a series of manual operations in a group of libraries with the cost of the operation performed by the use of the photoclerk. An interesting by-product of the series of studies is a brief section, "Management implications of the photoclerk," based upon reports of the cooperating libraries.

In the area of financial management the chief aspect of research that has not been adequately covered in recent issues of Library Trends is that in the relatively new field (since the Hoover Commission reports) centering around the performance budget. While the traditional budget estimates current expenditures in terms of salaries and wages and other objects, the performance budget is designed to
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estimate the amount of money needed to perform an anticipated volume of specific kinds of work. For each major type of work, estimates of unit cost are made; and the product of the volume of work and the corresponding unit cost equals the estimated amount of money required. Since the performance budget requires adequate data on units of work, as well as unit costs, few libraries are yet in a position to make full use of performance budgeting.

A study of the costs of operating bookmobiles, in the planning stage for almost two years, is now under way. Uniform definitions of terms used in segregating costs have been adopted, (although not always followed because of varying conditions). Emphasis in the study is on the costs of operating and staffing the bookmobile, and resulting unit costs, rather than upon unit costs in terms of services performed.

In summary, the present writer has found few examples in print of research in library organization and management that have not been previously reported in *Library Trends*. On the other hand he has visited several libraries where specific application of the techniques involved in the concept of efficiency in library management had been carried out. Most of these involve the revision of operating methods, such as those of charging and discharging, the elimination of duplication of operations; the use or development of new equipment, such as the photoclerk; and the rearrangement of the sequence of operations to eliminate unnecessary movement of materials or of manpower. There is undoubtedly a considerable number of libraries where a beginning has been made toward the improvement of management operations. Where there are obvious savings in manpower without accompanying increases in cost or reduction in the standards of work produced, the improvement in management is obvious, without the necessity of demonstration through studies of lowered unit costs. Nevertheless, publications showing the results of research in library management in a variety of types of situations, including the almost untouched field of human relations, should be one of the goals of individual library administrators, as well as of professional organizations, state agencies, and similar groups.

References


Research in Problems of Resources

ROBERT B. DOWNS

The term "resources" as interpreted in the present article is concerned essentially with research materials in university, reference, and specialized libraries, rather than collections of general cultural and informational content, such as one would find in a typical public library, or the books required for college instruction at the undergraduate level. Even with this limitation, the subject branches in many directions. It is directly related, for example, to various phases of interlibrary cooperation, union catalogs, union lists, bibliographical centers, storage centers, specialization of fields, microreproduction projects, regional planning, abstracting and indexing, evaluative studies of resources, and the several types of exchanges among libraries. In virtually every aspect, further studies and investigations are urgently needed.

In any consideration of American library resources, a basic factor is the extent of international publishing. Pioneer studies in this area were undertaken by M. B. Iwinski in 1908 and L. C. Merritt in 1941. Iwinski estimated that world book production through 1908 amounted to 10,378,365 titles, while Merritt calculated that by the end of 1940 the total had risen to 15,377,276. In each case, however, there were unavoidable gaps in the figures due to lack of data. During the thirty-two years from 1908 to 1940, there was an annual world book production of 156,216 titles, according to Merritt. A more recent survey was done by R. E. Barker, under Unesco auspices. Counting book production in sixty countries and using the latest figures procurable (in most instances 1953 or 1954), Barker concluded that the rate of publishing had risen to 240,000 titles annually, though again data were not available from a few nations.

Examining these figures, a number of questions arise. As of 1940, Merritt estimated that about two-thirds of the world's book output since the beginning of printing was to be found in the United States. Has the proportion risen appreciably since, with the aid of the Farmington Plan, U. S. Book Exchange, and other forms of cooperative

Mr. Downs is Director, Library and Library School, University of Illinois.
acquisition? Another pertinent query: What is a book? Barker reported an annual total of 11,900 titles for the United States and 37,500 for the Soviet Union, though it is obvious that the Russian definition of a book is far different from the American, and other differences are discernible from one country to another.

Establishment of the Farmington Plan, by the Association of Research Libraries, about ten years ago marked the first nation-wide effort to cover comprehensively monographic publications of the world. The program's objective is "to make sure that at least one copy of each new foreign book and pamphlet that might reasonably be expected to interest a research worker in the United States will be acquired by an American library, promptly listed in the Union Catalogue at the Library of Congress, and made available by interlibrary loan or photographic reproduction." On the basis of a decade's experience, both quantitative and qualitative studies are needed of the Farmington Plan's operations. In the view of some participants, the present coverage is inadequate and American libraries are failing to receive many significant books published abroad. Other critics maintain that too much material of low quality, without value to the scholar or research worker, is coming in to the country through the Plan. What are the facts?

When one enters the field of serials and government publications, complexities increase. In the field of science alone, an authoritative estimate is that more than 50,000 periodicals are being published currently. What percentage is being received by some American library, and what is the nature of those lacking? The first systematic attempt at complete coverage for a single area is being made by the Midwest Inter-Library Center. The center is setting out to procure all titles recorded in Chemical Abstracts not to be found in any of its member libraries. To cover the bibliographical universe in the same fashion would certainly be a large and expensive undertaking. A limited approach has been made by the Farmington Plan for new periodicals only. But are the lacunae really significant? How feasible would be a comprehensive Farmington Plan for serial literature?

Similar questions arise in the immense field of government publications, one of the most basic bodies of material in a research library. The flood of publications issuing from international, national, provincial, state, municipal, and other governmental units around the world is enough to inundate even the largest libraries. How completely are these materials recorded bibliographically? What proportion is being acquired in the United States? How feasible are cooperative acqui-
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sition arrangements, perhaps directed or assisted by our Federal Government? While American and British documents are familiar to librarians in the United States, some subject analyses of the contents of publications of other nations, particularly those of non-English speaking and minor states, would be of value as a guide to library acquisition policies.

Cooperative acquisition ordinarily involves the principle of specialization of collections or division of fields. Theoretically, at least, subject specialization among libraries offers one of the most fruitful and promising devices for promoting successful library cooperation. For the past 40 or 50 years, leading American librarians have advocated specialization among regions and fields. They have recognized the serious problems created for libraries by the tremendous increase in publication of books, government documents, periodicals, and other library materials, and the trend toward minute divisions of large fields and extreme specialization of subjects. Confronted by these conditions, it is obvious that the goal of completeness in any single library must be abandoned. No library ever possessed all the books in existence and any library in the future trying to reach that mirage is doomed to failure. The most logical alternative would appear to be divisions of fields among libraries. A few notable examples of such agreements can be cited: the Cooperative Acquisitions Project for European Wartime Publications, sponsored by the Library of Congress and the Association of Research Libraries shortly after the end of the second World War; the Farmington Plan which assigns books published abroad to about sixty libraries by subject categories; agreements between individual institutions, such as John Crerar—Newberry, Columbia—New York Public Library, Library of Congress—Department of Agriculture—National Library of Medicine, and Duke—North Carolina.

Nevertheless, the theory of specialization appears more popular than the practice. What are some of the factors that have retarded or blocked greater activity in specialization programs: institutional jealousies and rivalries; opposition of scholars to any division of library resources, lack of economic pressures, changing research interests (especially in universities), distances between libraries? Further investigations are called for, both of existing agreements and proposals for action, to discover what are the elements that make for failure or success in this important phase of the development of library resources.

Another major form of library cooperation is bibliographical centers
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and union catalogs. Any program of national bibliographical control must rest primarily on these agencies.

Heading the system of union catalogs in the United States is the National Union Catalog in the Library of Congress. Though established in 1901, the Catalog still falls considerably short of its goal of a complete record of all titles in American libraries. According to a recent report, however, the Catalog is able to locate in some library at least one copy of seventy-nine per cent of the titles for which it is asked to search. (It is of interest to note that the Canadian National Library through its National Union Catalogue was able to locate seventy-four per cent of titles requested in 1955–56.) The inauguration on January 1, 1956, of a plan to list locations for current imprints in the published National Union Catalog should insure a virtually complete record of post-1955 publications. A well-organized and systematic approach by regions is being made, enlisting the cooperation of all types of libraries likely to have materials worth reporting.

Numerous problems still confront the National Union Catalog, requiring further study and research for solutions. For example, assuming that new imprints are being covered satisfactorily, how can the older file, now containing about 13,500,000 cards, be made more widely available: through publication, microreproduction, or other device? What would be the most effective and efficient methods to bring in to the National Union Catalog a listing of the several million titles, not now represented, which sampling techniques have shown are held by American libraries? What is the nature of the twenty-one per cent of titles which the Catalog is presently unable to locate?

Like the National Catalog, the primary concern of regional union catalogs and bibliographical centers is the location of books, but in some instances, e.g., the Rocky Mountain Bibliographical Center and the Pacific Northwest Bibliographic Center, they perform a variety of added functions, such as taking the lead in regional cooperative projects, the development of specialization agreements and coordinated acquisitions among libraries of the area, aid to individual libraries in cataloging and classification, serving as clearinghouses for interlibrary loans, and the preparation of subject bibliographies.

Regional union catalogs have strong opponents and supporters. Their critics maintain that they are uneconomical and their continuation would be unnecessary if the National Catalog were properly completed. It is suggested further that the rapidity of modern means of communication—telephone, telegraph, teletype, air mail, and perhaps soon, facsimile transmission—makes unjustifiable the expense of main-
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taining a decentralized system of union catalogs, and points to the
desirability of having one big catalog, as complete as possible, for the
entire country. Apparently equally valid arguments are offered in
support of the regional plan. Among others, it is claimed that the
regional centers are providing a wider range of services than the Na-
tional Catalog; the National Catalog could not afford to take over all
the bibliographical services which regional centers render locally; and
the decentralized arrangement gives impetus to extensive cooperation
among libraries in the regions where the centers are located—a stim-
ulus that would not be felt from a remote national organization.

If the national versus regional union catalog debate is to be based
on facts rather than theories, here are a few aspects that appear to call
for investigation: (a) What services performed by a local or regional
union catalog cannot or are unlikely to be provided by the National
Union Catalog? (b) How important is the factor of size of libraries
in relation to the need for a regional bibliographic center, e.g., do such
centers play less significant roles as the individual libraries they serve
increase in size and achieve greater bibliographical self-sufficiency?
(c) Is the expense of operation and maintenance of the regional
center, perhaps in terms of unit cost per item of service, excessive,
making it an uneconomic enterprise? (d) What bearing do distances
between libraries, transportation facilities, and means of communica-
tion have on the effectiveness and need for regional centers? (e) What
proportion of books requested by scholars, research workers, and stu-
dents can be located within a given region, to that extent rendering
the area independent, and relieving libraries elsewhere of a heavy
burden of interlibrary loans?

Related to union catalogs and their problems are union lists, one of
the most popular forms of library cooperation. Union lists deal prin-
cipally with periodicals, but there are hundreds of examples concerned
with newspapers, rare books, government publications, maps, and
other types of material. Here, again, the question of national as op-
posed to local or regional coverage emerges. Many published union
lists are highly specialized, often confined to a minute field. They may
be issued in small editions, sometimes buried in journals of limited
circulation, and therefore likely to be overlooked. Works of national
scope, on the other hand, e.g., the Union List of Serials in Libraries of
the United States and Canada, are expensive to compile and publish.
Furthermore, they date rapidly after publication. Hence, one of the
most pressing issues before the research libraries of the country is
discovering ways and means of keeping such compilations as the

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national *Union List of Serials* up to date, without prohibitive cost, and of having new editions frequently available. Has the Library of Congress' *New Serial Titles* found the answer, at least for recent acquisitions?

Analogous in some respects to bibliographical centers is the regional storage center, a type of library cooperation much in the limelight in recent years. The three principal examples available for study—the New England Deposit Library, Midwest Inter-Library Center, and Hampshire Interlibrary Center—exhibit wide variations in organization, objectives, geographical coverage, and other features. While all are concerned primarily with little-used materials, approaches to the problem differ from one to another. The pioneer center, the New England Deposit Library, may be described as having a passive policy. It is entirely a storage operation, with each participating library’s books shelved separately, no attempt to eliminate duplicates, and no independent or separate acquisition program. The member institutions are all in the Boston-Cambridge area, and each pays rental charges in proportion to the amount of space used.

In contrast, the eighteen members of the Midwest Inter-Library Center are scattered over nine states, individual ownership of materials deposited is relinquished, duplicates are weeded out, and an active acquisition program is carried on through purchase or other arrangements. Financial support for the Center is provided by membership assessments, varied according to a special dues formula.

The third and smallest, the Hampshire Interlibrary Center at South Hadley, Massachusetts, was established by three college libraries—Mount Holyoke, Smith, and Amherst. A fourth member, the University of Massachusetts, has since been added. These institutions pool their research collections in the Mount Holyoke College Library, sell their duplicates, and use the proceeds to acquire works of research importance not held by any of the member libraries. The similarity of their interests, their comparable size, and their geographic nearness to one another are factors believed to have contributed to the Center’s success.

Assuming that storage centers are a desirable development and help to strengthen library resources, perhaps the first matter on which research is needed is the nature of collections to be placed in such centers. What are little-used materials? The Midwest Center has chosen to concentrate on textbooks, college catalogs, state and foreign government publications, foreign dissertations, foreign newspapers, directories, book dealers’ catalogs, and house organs. Are there other types
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of material or perhaps subject categories as infrequently consulted? From a cost standpoint, would it be more economical to microfilm and discard rather than to store the originals of seldom-used materials? On this point, the poor-quality paper on which many of the publications are printed ought to be taken into consideration. Also bearing on the matter is the problem of book obsolescence, and a continuation of C. F. Gosnell’s researches in this area might be rewarding.

A question that often recurs in discussions of storage centers is the extent of use. By definition, materials held by the centers are little used. Is it fair and reasonable, therefore, to apply the criterion of use in judging the value of these centers? It may be argued that their chief purposes are to provide comprehensive groups of certain types of material, and to furnish more economical storage space. On the other hand, if statistics of use fall to ridiculously low figures in relation to budgets for maintenance, it may be questioned whether the operation is a sound business enterprise. Studies of the nature of the use and of the users might reveal significant data, perhaps indicating that quality is compensating for lack of quantity.

Financial support is a perplexing problem for both storage and bibliographical centers. The usual pattern, regardless of how the formulas for dues or assessments are arrived at, is for the larger and wealthier institutions to carry a major share of the burden, presumably a kind of “service basis” à la H. W. Wilson. It could be maintained, however, that the smaller institutions gain more from the centers than do the large ones, with their strong local library resources. Can any scheme of financial support be devised that will be equitable for everyone concerned, and at the same time assure adequate maintenance?

A final question, doubtless most fundamental of all, is this: Would it not be feasible, through inter-institutional agreements, specialization, or division of fields among libraries, to accomplish everything being done by storage centers? A centralized organization, for overall direction, might still be essential, but storage would be decentralized, leaving the materials closer to the scholars and students most likely to need them. The Midwest Center has experimented to a limited degree with this idea, but fuller exploration would be highly desirable.

The regional approach to the study and development of library resources has proved fruitful. Because of the wide geographical sweep of the United States, the uneven distribution of library resources, and the varying characteristics of the principal regions, cooperative pro-
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grams can frequently be managed more effectively on a regional than on a national basis. Here is a raison d'être for such organizations as the Pacific Northwest Bibliographic Center, the Rocky Mountain Bibliographical Center for Research, the Southeastern Interlibrary Research Facility, and the Philadelphia Bibliographical Center. Each has been concerned to a greater or lesser extent with the historical, geographic, economic, educational, and social aspects of the area in which it is located. In the South, close liaison has occurred between library and other educational interests through the Southern Regional Education Board, which works closely with the Southeastern Association of Research Libraries and the Southeastern Interlibrary Research Facility in the promotion of regional library projects. Significant progress has also been made in the growth of university centers, e.g., Chapel Hill-Durham, North Carolina; Nashville, Tennessee; Atlanta-Athens, Georgia; and Baton Rouge-New Orleans, Louisiana.  

A diversity of research studies on regional problems could be suggested. What are some of the background reasons for striking inequalities in the distribution of American library resources? To what extent do the library holdings of different regions duplicate each other and to what degree are they distinctive? What types of library materials, e.g., newspapers, most readily lend themselves to regional or state, rather than national, projects for cooperative collecting? At what stage in the growth of the libraries of a region do the advantages of cooperative storage appear worthy of exploration? Since inadequate financial support is usually the most pressing problem in underdeveloped areas of the country, what sources of funds may be available for stronger support, and in what ways might any additional funds be used for the greatest benefit of all libraries in a region?  

Surveys of library resources have multiplied in recent years. Their scope has ranged from descriptions of the holdings of single institutions to cities, states, regions, and, in a few instances, the entire country. Furthermore, the thoroughness, the amount of detail, the background of surveyors, care in planning, form and arrangement of data, and other features differ considerably from one study to another. Because some have been sketchy, incomplete, and not well organized for use, doubts have been expressed as to the value of resources surveys. Among the purposes they are designed to serve are to aid the research worker in locating materials which he might otherwise overlook or find with difficulty, to give leads for inter-library loan inquiries, and to furnish a basis for cooperative planning, such as divisions of collecting interests.
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Techniques for describing and evaluating library facilities on the research level are still experimental. No generally accepted standards have been established. Even when dealing with a reasonably well-defined field, the problem of achieving clear descriptions is extremely difficult. Some persons would hold that only the subject specialist is qualified to evaluate a research collection, and the job should therefore not be attempted by the librarian with general training. Others suggest that the specialist's point of view is too narrow, and should be combined with the librarian's broader knowledge of the library's total resources. Likewise, it is argued that surveys ought to be restricted to relatively minute subject areas, with detailed analyses, rather than being inclusive of a library's resources as a whole. Exactly what types of data will be most helpful to the scholar and student are also matters of dispute.

Confronted by these uncertainties, planners of surveys need answers to such questions as the following: (a) What are the specific values of a resources survey that justify the time, effort, and expense it requires? (b) Who is best qualified to study a library's resources: the specialist or the generalist, or a combination of the two? (c) What details in the description and evaluation of a collection are most useful to the scholar and research worker? (d) What form and arrangement of a survey report are most helpful and preferred by users? (e) Are surveys, especially of groups of libraries, best confined to special collections and areas of concentration instead of over-all resources? (f) Are sampling techniques in measuring the strength of library holdings and in comparing libraries with each other useful, and if worth-while how can an accurate sample be constructed?

Related to the problem of describing library resources is the question of statistics of holdings. The number of items or the quantity of material is a useful measuring stick and is frequently an accurate indication of a library's effectiveness. Unfortunately, there is little uniformity at present in the methods used for measuring library holdings. Ways and means of standardizing practices have received the attention of various organizations, but thus far their recommendations have not been effective. As previously indicated, there is even less uniformity in figures for national book production from one country to another. Among the matters not yet satisfactorily resolved are a generally acceptable definition of a volume, the difference between a pamphlet and a volume, and the most accurate scheme for measuring the extent of library holdings, e.g., physical volume count, bibliographical unit count, or linear feet of shelving occupied.
ROBERT B. DOWNS

Library resources have been considerably augmented and enriched in recent years by numerous photo-reproduction projects.¹³ Large quantities of printed and manuscript materials have been reduced from their normal proportions to miniature forms, saving fragile records from loss, rescuing war-endangered materials, increasing the availability of rare books, saving storage space, and serving occasionally for original publication.

As microreproduction has answered some of the problems of research libraries, it has created others. For example, librarians want to know how permanent are the new media. If they put their trust in microreproductions, what assurance do they have that film will not deteriorate, images fade out, leaving their collections worthless after a short period, while the originals may have been discarded? Even for newly-made photo-copies, complaints of illegibility are frequent. Obviously, high technical standards should be the first desideratum. Further, assuming that no single medium will win out over its rivals and drive them from the field, what are the comparative advantages and disadvantages of the three principal forms: microfilm, microcards, and microprint? For what types of material is each best adapted, how do they compare in cost, in ease of storage, in convenience of use, in technical quality?

Among some scholars, a strong prejudice exists against any form of reproduction as a substitute for the original document. To what degree is such feeling based on sound reasons, e.g., the need for originals in certain textual and bibliographic studies of rare and early-printed books?¹⁴ There are some physical and psychological barriers to the use of microreproductions, such as eyestrain. Are these capable of solution?

Previous reference has been made to the dilemma of American research libraries in attempting reasonably complete acquisition of the world's periodical literature, and in maintaining up-to-date union lists or other records of locations. The dimensions of the field are indicated by the fact that the two largest libraries in the country, the Library of Congress and Harvard University, report that three-fourths of their annual intake is serial in form. The great publishing phenomenon of the twentieth century is the increasing dominance of the periodical as opposed to other forms of publication. The learned and technical journals, transactions of academies, societies, museums, observatories, universities, and institutions of all varieties, and the serial publications of governments require an increasing proportion of library funds, space, and attention.

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On the acquisition end, further studies, such as C. H. Brown's, are needed to aid in the selection process. Investigations would also be desirable of the effectiveness and efficiency of the world-wide system of exchanges of serial literature being carried on by universities, learned societies, and other organizations.

Of most direct concern to scholars and students is the problem of finding and keeping in touch with the mounting flood of references in every major field. Abstracting and indexing coverage in some areas is excellent; in others, sketchy or lacking. Even where indexing is thorough, it may not meet the demand for quicker access to information—hence all the current excitement concerning mechanical and electronic devices, systems for "information retrieval," facsimile transmission schemes, and similar inventions for bringing bibliography in an age of science under control. The experimentation and research in progress in this area is too new for evaluation, but is potentially of great future significance.

Certain aspects of acquisition work for research libraries have been touched upon in the foregoing discussion, in particular the cooperative phases. In individual libraries, with occasional exceptions, there is no division which shows less systematic planning than acquisition. Well-thought-out statements of acquisition policy are rarities. Instead, the inclination is to accept practically any gift offered, to enter upon exchanges merely because they seem to be free, to buy rare books for prestige rather than for use, and to branch out into new fields without a clear understanding of costs, of needs, of materials available, or of how the subjects fit into present holdings.

As a guide to libraries which would greatly benefit from adoption of and adherence to a sound acquisition policy, a thorough analysis of existing statements formulated by such institutions as the Library of Congress, Harvard University, University of Illinois, John Crerar Library, and New York Public Library would be desirable.

Another side of acquisition activity of major importance in the development of collections is financial. Cost studies are needed for books and journals, showing, for example, unit costs, increases in prices of various types of material, and comparative prices over a period of years. Investigations would also be valuable of discounts by dealers and publishers, and of auction house prices. The occasional attempts at cooperative buying by groups of libraries might be examined, with a view to finding reasons for their success or failure.

Other methods of acquisitions should also be studied and evaluated, e.g., such duplicate exchange systems as those operated by the Med-
ical Library Association, Special Libraries Association, and Association of College and Reference Libraries; the employment of a common agent, as in the Association of Research Libraries' Documents Expediting Project; and the stimulation of gifts from foundations and through friends of the library organizations.

One of the oldest and most popular forms of library cooperation is interlibrary loans. By this means, concentrations of wealth in library resources in certain regions and individual institutions have been widely shared with the have-nots. Scholars and graduate students with inadequate local library facilities have thereby been able to carry on research projects otherwise impossible for them.

Nevertheless, the present interlibrary loan system is not without defects and problems. Inevitably, the chief burden of such loans falls on the large libraries. As one instance, the University of Illinois Library loans, in an average year, five times as many volumes as it borrows, and a similar proportion would doubtless hold for other leading university and research libraries. The amount of staff time required by this activity has become a considerable item in the budgets of such institutions. Another factor is the serious wear and tear, or even loss of material sent by mail or express, a deterrent to the loan of rare or irreplaceable works.

Adoption of the code and forms prescribed by the Association of College and Reference Libraries has helped to ameliorate some abuses of the interlibrary loan system and to facilitate the handling of loans. Increasing use of microfilm copies instead of the originals is solving the problem of damaged and lost books, with the further advantage of giving the borrowing library copies that can be retained for its permanent collection.

Realistic and complete studies of the cost of interlibrary loans, both in the lending and borrowing libraries, are needed. If fees are to be assessed, as is being done in a few institutions, what is a reasonable charge? Should more stringent rules be adopted to restrict loans to materials for genuine research purposes? To what extent can photocopies replace loans of original works?

The above discussion indicates some of the wide ramifications of the resources field. Virtually every branch of librarianship is touched by it. If the premise is accepted that books, broadly interpreted, are the librarian's chief business and his reason for being, this is an area that is truly basic, and in which further research not only is needed but can pay high dividends.
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References

Research in Readers’ Services

RUTH ROCKWOOD AND LOUIS SHORES

In a broad sense, anything that a library does is directed towards readers service, for service to readers runs the entire gamut of library activities, from selection of materials, to processing, to making materials accessible both to groups and to individuals. It is involved in library organization, administration, and supervision.

In this paper, however, readers’ service has been interpreted in a very narrow sense, as service to the individual reader in his search for materials for information or self-education. It is further restricted to published material in the area of public library service since service to readers in college and university libraries has been ably covered by Leslie Dunlap in “Service to Readers.” The reason for so limiting the interpretation of readers’ services is twofold: (1) in America, service to individuals has been overshadowed by service to groups, and yet the library is especially suited to and deals primarily with individuals, and (2) service to individuals is an area greatly in need of further study as pointed out by Helen Lyman Smith in her survey of service to groups, Adult Education Activities in Public Libraries.

As libraries have moved from their passive role as literary storehouses toward a more active, dynamic role in the life of the communities they serve, readers’ services have mushroomed. Reference departments have expanded to meet the demands from readers for better information and research services. Readers’ advisory departments and adult education programs have been established to meet the need for guidance in self education on the part of adult users of the library, and branch, regional, and national services have been extended as the demand for more materials, readily accessible, increased. Yet much is still to be learned as to whether or not the expanded reference departments have realized their greatest potential, whether or not it has been to the best interests of library patrons.

Mrs. Rockwood is Assistant Professor of Library Service, and Mr. Shores, Dean, Library School, Florida State University.
to increase group programs at the expense of individual guidance, and just how organization affects readers' services.

As is so often true in a profession as new as modern librarianship, a profession where the field of endeavor is large, and the pressures for extension of services great, experience rather than research and study, has guided the changes. This has been particularly true in one of the services to individuals, the readers' advisory service, a service considered more important at one time but less important today. This readers' advisory service began in a small way in libraries in 1926, won a place for itself rapidly and by 1935 was well established in many libraries, large and small.³

Even though the body of research is not large in this area of librarianship, there have been some significant studies which have proved the effectiveness of the readers' advisory service. In 1934, Jennie M. Flexner and Sigrid A. Edge investigated readers advisory service of the New York Public Library.⁴ A second study in 1941,⁵ with the purpose not only of evaluating the service but also of viewing the changes in thinking and attitudes, as well as the development of techniques, was published. Careful records were kept of the service in order to determine the types of requests and the techniques used in satisfying these requests. Questionnaires were sent to the users of the service seeking the answers to four questions: (1) who they are, (2) why they read, (3) what they read, and (4) how much they read. At the same time a survey was made of the readers' advisory service in the branch libraries of the New York Public Library system.

During a seven year period over 6,000 individuals requested help, the majority asking for specific suggestions of books on a given subject. Not only did the study show the most popular subjects but it also showed how to help adults more effectively. Significantly, it showed that the over-all effect of a readers' advisory service was stimulating to all. Branch libraries employing the readers' advisory service showed a gain in adult circulation during a period when other branch libraries without this service showed a loss. The study concluded with the remark that the readers' advisory service was a service of "public importance."⁶

Not only was it determined that the readers' advisory service was a service of "public importance," but a service which filled a definite need was shown in another study in this area of readers' advisory service as reported in 1937 by Margaret Egan in "An Experiment in Advisory Service and Graded Reading in the C.C.C. Camp."⁷ This
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study differed from the one made at the New York Public Library in that all information about the enrollees in the program was gained from written records rather than from personal interviews with the participants. The reading experiment was planned and carried out by the Readers Bureau of the Cincinnati Public Library in cooperation with P. E. Williams, district educational advisor of the Thomas District, 5th corps area, Civilian Conservation Corps. Three camps were chosen for testing, representing three types of camp situations; (1) white urban dwellers, (2) Negro urban dwellers, and (3) white rural dwellers. The purpose of the study was fourfold: (1) to determine the practicality of individual guidance, (2) to determine the need for more personal library service, (3) to accumulate information on the type of book most useful, and (4) to build up closer cooperation and more definite understanding of needs and services between camp and library. The experiment was highly successful and showed both a need and a desire for individualized guidance in reading.

Despite the fact that readers' advisory service was a unique library function, important and successful, by 1950 service to individuals had given way to service to groups in the widespread adult education movement. Bernard Berelson, too, in another report of the Public Library Inquiry, The Library's Public, a "thorough and comprehensive study of the American Public Library" reported that by 1949 the readers' advisor per se had almost disappeared and the duties of the readers advisor had been assumed by every librarian who came in contact with the public. At the same time he found that librarians had little influence with readers in the choice of subject matter.

As this one service to individuals, the readers' advisory service, waxed and waned, another service to individuals, reference, continued on a fairly even keel. In 1949 Berelson reported in the Library's Public, that only a few studies of reference service in the public library had been made. Eight years later it still can be said that research in reference is needed.

One of the problems faced by a researcher in this area of readers' service, a problem so difficult of solution that it alone could account for the paucity of studies, is the matter of evaluating reference service qualitatively. In 1942, Elizabeth Opal Stone studied the methods used in evaluating reference service and listed ten that had formed the basis for much of the investigation of this phase of the subject. Most of the ten methods, however, were quantitative approaches, concerned with counting the number of reference questions asked, computing the time spent on reference tasks, classifying the inquiries, compiling
lists of unanswered questions, making spot surveys, or estimating the
time readers spent in a library, or combining several of these.

A study that went beyond the statistical measurement of reference
service and studied library organization as related to this particular
service to individuals was that done by Rose B. Phelps, "The Effect of
Organizational Patterns on the Adequacy and Efficiency of Reference
Study in the Large American Public Library" and reported in the
Library Quarterly in 1947. Three libraries were chosen for this study,
the St. Louis Public Library representing a functional type organiza-
tion, the Los Angeles Public Library, representing a subject depart-
mental type organization, and the Boston Public Library, representing
a mixed type organization. The number of reference questions asked
were measured, the attendance in reading rooms, the number of books
used but not circulated, as well as the quality of reference service
given. It was found that the subject departmental type of organization
provided the most adequate service, for not only did the use of ref-
ERENCE service in the three libraries correspond to the degree of their
specialization, but the quality of the reference service tended to favor
libraries of the subject departmental or mixed types.

Another recent study related to organization has to do with train-
ing personnel for reference service. Margaret E. Knox of the Univer-
sity of Florida, by the case study method, shows the effects to be
gained from a carefully structured in-service training program for
reference librarians.13

Just as it is important to ascertain the type of library organization
best suited to good reference service, it is important to determine the
users of such a service. Two studies concerned primarily with the
nature of the patrons of reference service were made by W. C. Hay-
good and reported in Who Uses the Public Library 14 and by M. C.
Kingman and reported in "Reference Work in a Branch Library." 15
Who Uses the Public Library was a "survey of the patrons of the
circulation and reference departments of the New York Public Li-
brary," a survey conducted in 1936. The questionnaire method was
used and 20,000 adult readers cooperated in the week long investi-
gation. It was found that reference department users are somewhat
older than circulation department patrons, with an age range that
tends to conform to the normal age range of the population as a
whole. It was further found that eighty per cent of the visitors to
the reference department were men, the largest group being profes-
sional workers, and that forty-one per cent were engaged in inde-
pendent study, and thirty-nine per cent in study connected with daily
work. M. C. Kingman's "Reference Work in a Branch Library" reported a study made at the Dorchester Branch Public Library in Boston, Massachusetts, in 1938. All the reference questions received at this branch were recorded and classified and it was found that ninety-nine per cent of the users of reference materials were students in the eighth, ninth and tenth grade, while the reference work itself merely reflected the educational trend in the schools.\textsuperscript{16}

In order to give effective reference service it is not enough to know how best to organize a library for such service. Nor is it enough to know the users of the service. The type of information requested must also be known. Several studies of reference service were chosen which were concerned primarily with an analysis of the type of questions asked. The first of these, "A Day's Work of the Racine, Wisconsin, Public Library" by M. Louise Hunt and Marie A. Newberry\textsuperscript{17} was a study covering both circulation and information service at the main library and in the six city branch libraries on a Thursday in February, 1933. On this one day 2.95\% of the city's population excluding illiterates and those under five used the library. During the survey day the information service was called upon 140 times, and as determined in the Kingman study, most of the questioners were junior high school students. Again, as in the Kingman study, questions keyed to the educational system comprised most of the queries. In this case sixty-nine per cent of the reference questions fell into the category of school inspired questions. It was further established that of the questions asked in the areas of social science and government, sixty-six per cent of the questioners were adults.

A second study, "Measuring the Results of Reference Service" by Helen H. Darsie\textsuperscript{18} was made in three public libraries with book collections of 25,000 to 150,000 volumes and with annual circulations of 375,000 to 750,000. Two of these libraries were in the Chicago metropolitan area while the third was a part of the New York metropolitan area. A record of the questions asked was kept and it was found that they were of four types; (1) how to use the library facilities, (2) requests for specific books, (3) requests for specific information, and (4) requests for advisory service. Less than one-half of the questions asked fell into the categories number three and number four, requests for specific information and requests for advisory service. This study also gave a further breakdown of subjects which brought out that there was a heavy demand for descriptive material about foreign people, while less than two per cent of the questions were on controversial subjects.
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A record of reference questions asked during one week was kept in nine library systems, Boston, Cincinnati, Denver, Houston, Los Angeles, Providence, Seattle, Tampa, and Washington, D.C. and reported in "The Measurement of Reference Service" by Edith Guerrier. In classifying the questions it was ascertained that eighty-three per cent of the total questions asked were information questions or fact finding questions, while only eight per cent of the questions asked were research questions and only nine per cent of the questions asked were readers' advisory questions.

In "Detroit Public Library Surveys Reference Use" Mabel Conant employed the spot check method to determine the extent, character, and effectiveness of the library's reference service. It was found that 73.08% of the questions required five minutes or less to answer, that the majority of the questions asked were inspired by school assignments, and that questions in the occupational field were low.

A summary of the findings of five other studies dealing with the classification of questions together with an appraisal of their conclusions as related to reference practice is included in Louis Shores Basic Reference Sources. Annotated are an early attempt by Martha Conner of the Pittsburgh Public Library to analyze 24,727 questions asked from September to December in each of the years, 1905, 1910, 1915, 1920, and 1925; two investigations more recently undertaken in the Graduate Library School, University of Chicago, by Dorothy E. Cole and Florence Van Hoesen; a study of questions asked in the Washington, D.C. Library, by Iva I. Swift; and an investigation of some 987 reference questions asked by children in New York elementary school libraries.

Miss Conner's revelation that public library reference questions heavily emphasized two subject areas, namely the social sciences, and science and technology was confirmed nearly a quarter of a century later by Miss Cole in her study of 1,026 questions asked in thirteen libraries that included large, small and medium public, junior and liberal arts colleges, and special libraries, when she found that from sixty-nine to eighty per cent of the questions were in the subject fields of the social sciences, history, and useful arts.

The findings of Miss Van Hoesen, after examining 3,596 questions in six public library systems, indicated a preponderance of subject interest in the 300, 900, 500 and 600 Dewey classes.

Miss Swift's study identified four major types of questions: (1) directory, concerned with place or material location; (2) fact-finding, dependent upon the World Almanac kind of source; (3) reader ad-
visory relating to "best" book for a purpose; (4) subject specialized queries. Miss Cole also classified questions by type and found that 55% were fact, about 20% general subject information, 10% "how to do," and 8% "supporting evidence."

Both Miss Van Hoesen and Miss Cole undertook to determine also the purpose behind these questions and who the inquirers were. In Miss Van Hoesen's study the major purposes identified are (1) school assignment, (2) job, (3) class, (4) independent study. Miss Cole found that 356 of her 1,026 questions were asked by students, and 210 by professional workers.

Miss Carpenter's study of elementary school children attempted to discover the sources most frequently used to answer questions. Of the 989 queries, more than half (510) were answered by reference books. Of these encyclopedias alone did the job for 290 questions; the World Almanac for 42; and unabridged dictionaries for 33.

Shores finds these classifications of value to reference practice because they tell the librarian on the firing line in a general library to expect in his daily work a preponderance of questions in the social and natural sciences, that most of these questions will be of the fact-finding or directory type, that the people who ask them will be for the most part students, workers, or club women, and that the compelling purposes will be school assignments, job improvement, or club activity.²⁷

In an appraisal of reference questions asked during one year in eight public library systems, Shores in an article for the Saturday Review entitled "What Americans Wanted to Know in 1951"²⁸ found evidence that free inquiry was still part of the American way of life, that the range of questions was so wide as to guarantee no censorship on investigation existed. Five categories of inquiries predominated: current events, questions relating to contests in quiz programs, household problems, people and places, and curiosities. The most frequently consulted sources included dictionaries, encyclopedias, almanacs, atlases, indexes, and biographical sources.

Recent trends in reference service are critically appraised and surveyed in Samuel Rothstein's Development of Reference Service,²⁹ Sara Reed's 1946–56 Public Library Reference Services,³⁰ Frances N. Cheney's Public Library Reference Services in Tennessee Survey Results,³¹ and two estimates of British reference services by Shores, A Frame of Reference ³² and British Reference.³³

Rothstein²⁹ interprets the impact of scientific investigation on reference method as resulting in an expansion of abstracting, document-
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tation, and other literature searching activities, with the net result of full partnership in research for the librarian.

Miss Reed notes subject departmentation, integration or coordination or reference cooperation, telephone services, the use of audiovisual materials, and services to groups as among notable tendencies in public library reference services. This notable study, made specifically for the Armed Forces Section of the A.L.A. was based on a survey of twenty-five representative public libraries in every part of the nation. It foresees automation, specialization, cooperation, regional reference service as an inevitable part of the library’s information function tomorrow. Many of these findings are now being supported by an extensive survey of public library reference service, state by state, started by the Reference Section of the Public Library Division and now being continued by the auspices of the new A.L.A. Reference Services Division. The Survey Committee under the chairmanship of Frances N. Cheney has given some indications in one state what findings may result nation-wide, for example, twenty-four Tennessee libraries present a reference portrait for the state that shows such features as research, program planning, bibliography compiling, and library instruction in varying proportions. The picture reveals further what restrictions there are on reference, who is served, and what kind of personnel do the serving. Sources most frequently consulted are also indicated.

For the Annual Lecture given at the 75th Anniversary meeting of the Library Association at Bournemouth, Shores offered a redefinition of the term reference as “the promotion of free inquiry.” Three conditions necessary for adequate reference service were identified as (1) availability of materials, (2) accessibility of sources, (3) regional cooperation. All three of these conditions were discovered to an advanced degree in the libraries of the United Kingdom.

In retrospect and for American librarians, Shores subsequently re-appraised the implications of two phases of British reference—the personal inquiry service which approached almost “bibliotherapeutic” proportions in the intimacy of its application, and the cooperative and continuous abstracting service which sped the latest research to the exact point of critical need through an ingenious combination of patron as well as source classification, and advanced dissemination devices, including facsimile.

It would appear from the limited research in this area of service to the individual, that the readers’ advisory service, while effective, reached too few people to be continued, that reference departments
are primarily concerned, except in the New York Public Library, with answering information type questions for younger adults using more materials from the collection as a whole than from the reference collection itself. The quality and effectiveness of service to individuals is as yet, however, largely undetermined, as well as the best methods and the best resources for expending and extending it. But on the horizon there is promise of new and startling readers services yet to come.

This promise of new and startling readers services can become a reality if careful research points the way. First of all, a complete survey of services to individuals is needed, a survey that will tell where we are in regard to service to individuals as Helen L. Smith's *Adult Education Activities in Public Libraries* \(^{24}\) told where we were in regard to service to groups. This survey should be followed by a detailed study of each method used in serving individual readers and an evaluation of the effectiveness of each method. Further study is also needed in the evaluation and comparison of service to individuals in relation to service to groups. This is of prime importance in the light of the current trend in libraries toward service to groups at the expense of service to individuals. Specifically, we need to know if the library should abandon its service to individuals, a service the library is so admirably equipped to perform, merely because of a desire to reach larger numbers. Research is needed on the measure of reference service, on how to appraise and record such service, on the history of reference service and the evolution of principles, on the use of electronic devices in locating sources and information, on the type of organization best suited to reference service. Further study is also needed on the relation of the location of materials and the readability of books to service to individuals. Worth-while investigations, investigations which would help point the way toward improved service need to be conducted on the desirability of expanding abstracting services, the desirability and the techniques for improving and increasing cooperation among libraries and within libraries in service to individuals. The highly successful British personal inquiry service should be tried in United States libraries. These are some of the important steps we can take to show what we have done, where we are, so that we can know where to go.

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Research in Readers' Services


6. Ibid., p. 71.


10. Ibid., p. 70.


16. Ibid.


27. Shores, op. cit., p. 8.
34. Smith, op. cit.
Research in Cataloging and Classification

RUDOLPH GJELSNESS

The prospective revision of the A.L.A. Catalog Rules opens up many opportunities for investigations and research studies in library schools and in libraries. Another revision of this important tool should have the support of the entire profession and should enlist the aid of all who are qualified to make constructive contribution to it. It is basic to all library services and can lead the way to a more fruitful cooperation among our own libraries and cooperation with libraries of other countries as well.

It is rather remarkable that the 1908 Code should have remained unrevised until 1941 when the preliminary second edition was published. During this period of thirty-three years, when it was reprinted by the American Library Association again and again without change, libraries were growing rapidly, were developing dictionary catalogs with Library of Congress cards, were reclassifying and recataloging, and to meet the needs created by large and complex collections were forced to turn more and more to the Library of Congress for answers to cataloging problems. Only the Library of Congress, not the American Library Association, was keeping somewhat abreast of the times with the publication of supplementary rules on cards and rules in monograph form for special classes of materials, such as periodicals and the publications of corporate bodies. Catalogers were compelled to consult these various sources, and in cases where no rulings were available, to attempt to deduce what was Library of Congress practice from the printed cards. Standardization with Library of Congress cards had come rapidly and libraries were anxious to take full advantage of it by adapting their cataloging to that of the Library of Congress.

The problem became acute when cooperative cataloging was extended in the 1930’s and many libraries began for the first time to provide copy for cards to be printed by the Library of Congress. It was this dilemma which finally led to the decision by the American Library Association to prepare a new edition of the rules, to be based

The author is Chairman, Department of Library Science, University of Michigan.

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on the 1908 Code but to incorporate the supplementary rules of the Library of Congress. While the latter was not officially involved in the work on the 1941 edition, there was considerable cooperation, and the Library of Congress permitted the A.L.A. Code Revision Committee to engage one of its senior catalogers, Nella Martin, to prepare the material for the preliminary edition. The 1941 Code attempted to bring into one volume what was in effect the current practices of the Library of Congress, codified and fitted into the general pattern of the 1908 edition. It was intentionally a full document, with much detail, and, obeying an insistent demand from catalogers, was generous in its provision of examples to illustrate specific rules. In addition to incorporating Library of Congress rules, there were rules covering special materials, such as music, prepared by appointed committees and individuals in the profession, often the result of considerable investigation and research.

The 1941 edition was divided into two parts: "Part I. Entry and Heading" and "Part II. Description of Book." Part I underwent revision in the light of the criticism received and was published in a final second edition in 1949 by the American Library Association. Part II was omitted from the second edition in view of the intention of the Library of Congress to prepare a revision of its own rules, and when the Library of Congress published its Rules for Descriptive Cataloging in 1949, they were adopted by the American Library Association as its official rules as well. In the next edition of the Code, these two parts will be brought together again, as they should be, under the imprint of the American Library Association.

If there is a lesson to be learned from the foregoing, it is that a catalog code must be continuously revised and be given periodic critical examination to assure an orderly and useful development. Its editors, contributors, and critics must be in touch with the cataloging problems raised by the incoming flow of material in a large library in order that new requirements may be met with new or revised rulings. There must be an effective way to utilize the experiments carried out in individual libraries, to promote needed studies and investigations. The relations which have been established between the A.L.A. Division of Cataloging and Classification and the Library of Congress give promise of an effective partnership to accomplish all these things. Proposed changes and additions by the Library of Congress are reviewed by the appropriate body of the American Library Association and there is opportunity to change and amend in the light of professional opinion.

An example of the kind of cooperation which has developed is the

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critical analysis of the A.L.A. rules for entry prepared by Seymour Lubetzky of the Library of Congress, for the Board on Cataloging Policy and Research of the A.L.A. Division of Cataloging and Classification. This publication, which lays the groundwork for the next edition, was published by the Library of Congress as a contribution to the discussion of the problem.

The chairman of the Catalog Code Revision Committee for the third edition, W. E. Wright, has presented in broad outline many of the changes and improvements which are contemplated. A reading of this article will raise questions which might be answered by special studies and research investigations. Probably the most far-reaching change contemplated is the elimination of the distinction in the rules between societies and institutions as authors. It is proposed that both types of corporate bodies be entered under their names if they are individual or distinctive. This change, if it proves feasible, should substantially reduce the number of rules and exceptions to rules, and eliminate the necessity of deciding before determining an entry if a particular corporate body is a society or an institution. Further study of this proposal should reveal what new problems will be created by the change and the probable effect on existing records and shelf locations. This is not to suggest that changes in the rules should not be made if they necessitate recataloging in libraries. If the changes are desirable, libraries should be prepared to make changes in their catalogs but they should have some guidance on the most effective way of making the required adjustments. Libraries should face the fact that a basic tool such as the catalog code must be receptive to change, and that the resulting changes in catalogs must be provided for as a part of the maintenance budget of libraries. The specific statement of the Catalog Code Revision Committee on this point appears in Wright's article and reads as follows: "In preparing the revision, the amount of recataloging which may be involved in changes in the rules should not be considered if the change is otherwise desirable."

Wright indicates that the new code will incorporate rules for special materials, such as films, manuscripts, maps, music, phono-records, prints, and photographs. Rules for some of these groups have already been developed but others remain to be done. Here there will be opportunity for those with knowledge of these materials to make a contribution. Other groups of rules, such as those for religious organizations, will profit from the study and criticism of the librarians who through education and experience have acquired a specialist's knowledge of the literature of the subject.

It is expected that the new edition of the cataloging rules will be
an Anglo-American edition just as the 1908 Code was. This is an objective to be sought and should be attainable. The [British] Library Association has appointed a Cataloguing Rules Subcommittee which is prepared to work with the American Committee. This subcommittee has already considered the rules on which agreement was not reached in 1908 and has decided tentatively to follow the American rules of the 1949 edition. The possibility that the British Museum will change some of its rules is an encouraging development. This is particularly to be noted in the rules for anonymous and pseudonymous works and for certain categories of material such as dictionaries and encyclopedias. While bibliographers and catalogers have often been guided to the identification of difficult items through the unusual approaches which the British Museum Catalogue of Printed Books offers, it is probably also true that entries are frequently overlooked completely because the user is not aware of the rules governing these special categories. With the cooperation of the [British] Library Association and possibly other library associations in countries where English is the native tongue, it should be possible to achieve a high degree of agreement on all the rules for author and title entry. Whether an identical text will serve for both editions presumably awaits decision.

There should be an effort to extend agreement to other parts of the world as well, although language differences dictate variations, many of which are probably necessary. Standardization of entries through uniform rules will do much to facilitate the exchange of information regarding publications, as well as expediting the acquisition and recording of foreign materials in libraries all over the world. The resulting influence on bibliographical publications in all languages will result in economies in bibliographical activities and a fuller use of contributions made to bibliography by all nations.

The time seems ripe to begin planning an attack on this problem of international agreements. One of the needs is a study and analysis of the chief differences which now prevail in codes in various countries and an identification of basic principles where agreement can be expected. Any international agreement should minimize or eliminate the variations dictated by language differences as far as possible. In personal name entries, for example, preference should be given to the vernacular form and in the case of classical authors to the Latin form. In the entries for corporate authors, again the vernacular should be preferred. Is it possible that consideration might be given even to the use of geographic headings in the vernacular for official
documents as is done in some foreign codes such as the Belgian. It might be noted here that some foreign libraries incorporate directly into their catalogs the Library of Congress printed cards for United States documents, without change of entry, although in the same dictionary catalog subject headings for the United States are translated into the language of the country. However, even if uniformity cannot always be attained to such an extent that catalog entries can be incorporated without change into the catalogs of countries using different languages, agreements on the principles governing the choice and form of entry would be an attainable objective and a distinct contribution to bibliographical progress. If national bibliographies would follow standard principles on entry form and bibliographical description, bibliographies in various languages could be used more effectively by workers in all languages.

A Comparative Study of Cataloging Codes by J. C. M. Hanson can be a point of departure for an attack on the extension of international agreements. This was published eighteen years ago, however, and should be brought up to date, with fuller details. In a more recent work, covering five catalog codes, S. R. Ranganathan examines the validity of individual rules with the aid of certain fundamental principles or canons. This is a helpful and penetrating analysis. In many countries, library associations are considering revisions of their rules and the trends in these revisions should be taken into account. In Europe, for example, the division which has existed between the countries following Anglo-American rules and those following the Prussian Instructions may be eliminated to some extent since the German groups are considering the adoption of corporate entry and the entry of anonymous publications under the first word of the title. Contributions to a comparative study of catalog rules can be made by foreign students in library schools through studies of the rules and practices of their own countries. Such investigations would prepare them also to take the initiative on these problems in their own countries. After the necessary preliminary investigations have been made, international agreements should be sought with the assistance of international groups such as the International Federation of Library Associations and Unesco.

The cataloging of materials in non-European languages can present great difficulties for libraries because catalogers with the required language equipment are not available and because the rules designed for materials in European languages are not adequate. This is an area where the fullest cooperation among libraries can improve the cata-
logs and take some of the burden of preparation of materials from the individual libraries. The Special Committee on Cataloging Oriental Materials, established by the A.L.A. Division of Cataloging and Classification in 1954 (G. Raymond Nunn, chairman), has worked with the Library of Congress and other libraries having Far Eastern collections, on amendments to A.L.A. cataloging rules which would standardize cataloging practices for Chinese, Japanese, and Korean publications. The resulting decisions will permit the production of cards for these materials which can be incorporated into the catalogs of all the libraries involved. This committee expects to extend its investigations also to subject headings and classification. The work of this committee represents a cooperative attack on common problems which should bring advantages, including economies, to all the libraries concerned. It should be emphasized also that the effort of the committee is not to create special tools but to adapt the general tools to the needs of these special materials.

For libraries of a general character in the United States, the problems in classification are likely to be concerned with two classification systems, the Decimal Classification (D.C.) and the classification of the Library of Congress (L.C.). The survival of these two systems in our libraries is clearly established by Thelma Eaton in her study of classification in college and university libraries, where she concludes that only 1.5% of the libraries covered by her survey used other classification systems. It is probable that the D.C. is used by at least 95% of the public libraries, and according to the Eaton figures it is used by 84.6% of the college and university libraries. Each year records the decision of some of the libraries which have used other systems to change to one of these two. Cutter's Expansive Classification, for example, with its many excellent features, and once a favored classification, is now used in very few libraries. It seems unlikely that any new system can compete with these two in the near future. They have the advantage of assured support to provide new editions as needed and the further substantial advantage of having their classification numbers printed on Library of Congress cards. The D.C. numbers have appeared on the printed cards since 1930; the editorial work on the various D.C. editions has been done at the Library of Congress since 1927, and since 1954 under the administration of the Library of Congress. To a considerable extent the two systems are assured of a parallel growth.

The D.C. has often been criticized for over-expansion in some sections, for failure to keep up with the advance of knowledge, and
for retaining out-moded relationships. The history of its vicissitudes in the last thirty years and the developing relationships with the American Library Association and the Library of Congress has been presented in an informative article by V. W. Clapp, chairman of the D.C. Editorial Policy Committee. It is clear that the D.C. finds it difficult to satisfy all its users, that some libraries hold firmly with its long-standing principle of "integrity of numbers" while others demand a reconstructed classification which will reflect changes in subject relationships promptly. The probable cost of recategorization is a determining factor restricting the amount of change, other than expansion of existing numbers. This may be a necessary and practical choice, but points to the possibility that at some time the issue of adequately adapting the classification to modern needs will have to be met. Here again, should not libraries expect to have to make changes with each new edition in order to keep the system up to date? The eventual alternative may be a large-scale recategorization project at great cost and inconvenience. In spite of the efforts of the D.C. editors to secure suggestions from its users to guide them, it is undoubtedly true that they have only incomplete knowledge of how libraries use the classification. To what extent libraries follow the schedules faithfully and to what extent they depart from them would be valuable information for future planning. Careful studies of use among similar types of libraries or libraries of comparable size are to be encouraged. The D.C. serves so many types of libraries, more specific information on how it is used might answer some long-standing questions on this classification, particularly relating to the fullness of editions and such questions as the continuance of a "standard" edition like the 15th. A scholarly attack on what would be required to modernize the D.C. in terms of present-day needs should help to chart the future.

The L.C. classification has not yet been subjected to pressure from its users for substantial changes. The schedules are revised with some frequency and subscribers are kept currently informed about changes and additions. It is a younger classification than the D.C. and was set up at the outset for a large research collection and has a better basic structure for that purpose. Its use has been chiefly in university libraries and specialized research collections and will probably continue to be so. Typical of the many adaptations made in libraries are the reports from two libraries on the use of the literature classification scheme. A doctoral dissertation now in progress by Annette Hoage should throw further light on the extent and nature of its use
in libraries. In contrast to the D.C., it is not dependent for its continuance on use by other libraries and changes in its schedules will presumably be determined by the requirements of the collections of the Library of Congress. This may tend to make the classification less responsive to the needs of other libraries, unless its needs correspond with those libraries using it. An abridged L.C. has sometimes been suggested but this would in effect be a new classification since the structure of the schedules does not permit abridgment without change of numbers. The advantage of having the classification number on the printed cards would also be lost to libraries using the abridgment. Some simplifications have been made in libraries but rather little is known about them. They are likely to involve particularly the reduction or elimination of some of the long tables which are characteristic of each schedule. Studies of how the L.C. is used in libraries would be of value to the libraries using the scheme as well as those engaged in changing over to it.

While these two classifications are likely to predominate in general libraries, there are other classification schemes which merit study and which have advanced the theory and practice of classification. The classification of the Harvard University Graduate School of Business Administration is one of these and demonstrates well the functional approach in classification. In addition to form and country tables it also has an industries list which may be applied throughout the classification, or used as the main classification. It also differentiates the forms and provides for two separate tables, one for material forms and one for subject forms. It is a good classification to use in teaching classification and particularly to follow a study of the L.C. and D.C., since it exemplifies the needs of the special library as opposed to the general. It can also be used to introduce a study of some features of the Universal Decimal Classification and the Colon classification with its greater flexibility and adaptability for documentation work. There are a number of other special classifications which merit study and comparison with general schemes and among the general ones the Bliss System of Bibliographic Classification offers different relationships of subjects and some distinctive features. Since the development of information retrieval systems will have to draw on the theory and practice of classification and subject heading, special subject schemes will be important and are likely to multiply. A central agency to collect these schemes and to make them available for study has been provided by the School of Library Science of Western Reserve University, where the Special Libraries Association has
placed on deposit its loan collection of special schemes and lists.\textsuperscript{14}

In recent years, subject headings have been under considerable discussion and fundamental questions have been raised regarding the structure of subject heading lists and the effectiveness of subject headings in the catalogs of different types of libraries.\textsuperscript{15, 16} For general libraries, it would appear that the two basic lists supply the need of standard headings: \textit{Subject Headings Used in the Dictionary Catalogs of the Library of Congress} and \textit{Sears' List of Subject Headings for Small Libraries}, the one for the large public library and for research libraries, the other for the smaller libraries, particularly the public and school libraries. These are indispensable aids to libraries and while they have served well for many years, no doubt there is room for improvement. Several important basic works have been added to the literature of subject headings in recent years, by Julia Pettee,\textsuperscript{17} David Haykin\textsuperscript{18} and J. H. Shera,\textsuperscript{19} covering both theory and practice. These lay the groundwork for further investigations, and suggest lines to be followed. Dissatisfaction seems to stem from two principal causes: (1) the suspicion that subject cataloging may be more expensive than use warrants and (2) the growth of card catalogs has been so great as to repel and impede use.

In most discussions of subject headings where questions have been raised regarding present practices, an attempt has been made to solve these problems on the basis of the needs of the user, that is, the reader in the library. The reader in the general library, however, varies greatly in his approach, and the nature and extent of his dependence on the catalog is difficult to fix with certainty. However, a number of useful studies have been made, which taken together throw some light on the problem. C. J. Frarey\textsuperscript{20} has made an analysis of twenty-seven such studies which have been completed since 1930. He has pointed to some conclusions which may be derived from the studies, at the same time calling attention to the fact that they have been based largely on quantitative data and cannot necessarily establish what may be essential needs from the qualitative standpoint. O. L. Lilley emphasizes this point also but urges more studies and that they be coordinated.\textsuperscript{21} In a provocative article on cataloging costs R. C. Swank\textsuperscript{22} strongly recommends a particular kind of investigation which would be "case studies of the experience of readers in using the entire range of a library's bibliographical services—studies that could then be related to analyses of the costs of the entire range of services." A study of catalog use by S. L. Jackson is now under way in forty libraries in the New York area, under the supervision of

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the Board on Cataloging Policy and Research of the A.L.A. Division of Cataloging and Classification.

Among the suggestions for changes which have emerged from the studies covered by Frarey is that there be limitations on subject coverage in the general catalog to be determined on the basis of frequency of use. A chronological limitation has been suggested which might arbitrarily eliminate subject analysis for materials published before a certain date, e.g. 1800. A limitation on subject analysis for books in foreign languages has also been suggested. The possibility of removing large blocks of specialized subjects from the catalog and printing the entries in a book catalog as a special bibliography is seriously considered by some of the large libraries. In the large university, the effect of undergraduate libraries with their own collections and catalogs should be studied in relation to the future of the general catalog. Likewise, the great growth of the special libraries within the university family with their own special catalogs may suggest the limitation of subject analysis in many fields in the general catalog. Many of these problems, including the development of standard lists, point to the need of studies directed toward special subject areas. Competent analysis of subject headings in special fields will help to define the scope of headings and their relationships to other subjects. Such studies will be most useful if they build on current standard lists as was done by C. E. Pettus in education and M. J. Voigt in physics.

It is an encouraging development that some of our largest libraries are recognizing the need of continuous planning in the development of their catalogs. It is clear that this planning is best done by a staff which is not involved in the day-to-day work of processing materials. Harvard's decision to create the position of associate librarian for Catalogue Planning is a step in this direction. This was done "in order to permit a top-ranking officer of the Library, relieved of administrative responsibilities, to devote full time to planning for the future of the catalogues." One of the recommendations of the management survey of the Preparation Division of the New York Public Library was the appointment of four staff assistants to the chief of the division, one of whom would be "an editor of the catalogs to revise and establish subject and classification systems, to develop plans for weeding and revising the catalogs, and to plan 'consumer surveys' of the catalogs." K. D. Metcalf in his Report on the Harvard University Library has identified many of the catalog problems to be faced at Harvard and suggests some solutions. The printing of sections of
the catalog in book form is one proposal advanced. This would provide important bibliographies in special categories and at the same time remove long files of cards concentrated under single entries, such as voluminous authors, from the catalog. With Harvard as with many older libraries the catalog problems have been allowed to accumulate until they have become too serious to be ignored any longer.

Serial publications present a complex of problems for libraries, particularly in the research libraries where they may constitute a major part of the collections. A. D. Osborn has made a comprehensive study of this type of publication; he has identified the nature of the basic problems connected with serials, and has indicated the trend of current practice and thinking. Serials have their own separate and distinct characteristics which require special treatment and yet they involve also all the processes concerned with books—entry, classification, and subject heading. However, the approach to serial content by the reader is so largely through printed indexes and other printed sources that the library's primary function in many areas becomes that of providing a record of holdings. Because serials include many publications of government units and of societies and institutions, the determination of entry involves all the rules for title and corporate entry. Any improvement in the rules for these types of entries will be an improvement in serial processing. An attack on some of the problems involving serial entries as well as other cataloging problems may be found in the Manual of Principles on Limited Cataloging for the Air University Library, prepared by O. T. Field. Changes in the names of corporate bodies and in the titles of periodicals have long necessitated expensive changes in records and in the relocation of sets, in order to bring files under the latest title in the catalog and on the shelves. An innovation which is gaining considerable attention is to enter serials under the form of author and title used at time of publication. To what extent this is to be carried out as a general rule needs to be determined. It has been adopted by the National Library of Medicine, where, however, provision is made to keep serials with continuous volume numbering together on the shelves. The Library of Congress has recently made a study of its serial cataloging under the direction of C. S. Spalding, chief of the Serial Record Division. Libraries await the results of this study with much interest, since it may lead to important changes in serial cataloging. The main issue for research libraries is how to provide a serial record adequate for the needs of public and staff and requiring a minimum of changes and
additions. It is generally agreed that a single record should be maintained for current receipts of all serials, but there is no unanimity on the extent to which other records should duplicate or complement this basic record.

The benefits derived by libraries through the use of Library of Congress printed cards and those of the H. W. Wilson company have been so great that any extension of that type of service will have enthusiastic support. At present research libraries may get no more than sixty per cent of printed cards for their current cataloging. Studies are needed to suggest how the coverage can be extended. The amount of duplication of materials in libraries is of course the crucial issue here. J. M. Dawson, in a dissertation dealing with the current acquisitions and cataloging of research libraries, sought to determine the extent to which Library of Congress printed cards were available for the material acquired by research libraries and the extent to which the cards were used. Dawson found that half of the cards were used without change, and that some libraries made more changes than others, raising the question whether a higher degree of conformity should not be sought in the interests of economy. Classification changes accounted for one-third of all changes with more than twice as many in D.C. numbers as in L.C. numbers. The author recommends further study of the extent of duplication of materials currently acquired by research libraries and the time span involved. He also recommends that similar studies be made of the smaller university libraries, the college libraries, and the medium-sized public libraries. The expansion of the Library of Congress Catalog—Books; Authors, to include cards reported to the National Union Catalog is a further aid to cooperation in cataloging. This expansion began January, 1956.

The smaller libraries, public, college, and school, have much to gain from the extension of centralized or cooperative processing wherever it is feasible. In some situations this might begin with cooperative book selection and take the book through all the processes until it is on the shelves, relieving the librarian in the small library for work with the public. There are several types of these arrangements in operation now and they are increasing. Planning and research are needed to lead the way, to identify the patterns suitable for different situations, to determine how time and money may be saved through cooperation. Centralized processing in a school system is not unusual, but it is not common as yet for independent libraries to join together to have their processing done in one center. The experience of libraries such as Wayne County in Michigan, Erie County in New York state, and the regional center in Watertown, New York, demonstrates the advantages
to be gained. Many of the problems incidental to the establishment of such a service are identified in an article by Thera P. Cavender.\textsuperscript{52}

On the operational side of the technical processes, libraries are continually seeking the most effective organizational plan under which to place personnel, to distribute the work load and provide for an efficient procedure. The variations which exist are numerous and no plan as yet can be considered a standard or best plan. Only careful and thorough comparative studies could result in an evaluation which might provide a reliable guide for libraries.

There was apparent in the 1940's a marked tendency to combine the technical processes into one department under an assistant library director. Such departments ordinarily included acquisitions, serials, binding, cataloging, classification, and preparation for the shelves. One result to be gained from this combination was expected to be a more effective coordination of all the technical processes, and the elimination of duplicating activities and records. It has been pointed out, however, that cooperation can be achieved without such a union, and many libraries retain the two traditional departments, acquisitions and cataloging.\textsuperscript{53} The principal overlap in acquisitions and cataloging occurs in bibliographical searching, in the records for books in process, and frequently in the handling of serials. These activities need to be coordinated whatever the organizational plan may be.

The division of work within a university catalog department has tended in recent years to be according to subject areas, with each cataloging unit responsible for descriptive cataloging, classification, and subject cataloging for books within the area. This is in contrast to division according to form of material, i.e., government publications, or function, i.e., classification. The reorganization in the Preparation Division of the New York Public Library provides for such subject divisions and combines classification and subject analysis with descriptive cataloging for the original cataloging.\textsuperscript{34} Differentiation of materials on the basis of difficulty has resulted in the provision of units in some libraries to catalog items which require no original cataloging and which can be cared for by non-professional staff. Other ways are being sought to make the most effective use of the training and experience of the professional cataloger. The Committee on Administration of the A.L.A. Division of Cataloging and Classification undertook an extensive study of technical services in the operations of large libraries. The detailed report of this committee was published in 1955, and included recommendations of areas where the committee felt more detailed studies were required.\textsuperscript{35}

Cataloging costs have frequently been under investigation and the
literature on the subject is impressive. It has not been possible to arrive at a standard norm of cataloging output applicable even to a given type of library, but cost studies have yielded data which has been useful to individual libraries in considering changes in organization and procedure. Studies which would help to identify where unnecessary costs occur are needed. The relation of library growth and centralization to cataloging costs, the effect of variations in cataloging practices in the general library and particularly in special collections and departmental libraries, including the use of special classification schemes and special lists of subject headings, are possible problems to be studied.

At the request of the Board on Cataloging Policy and Research of the A.L.A. Division of Cataloging and Classification, a report on processing for the Midwest Inter-Library Center has recently been completed by Velva J. Osborn. This report is of special interest because many of the problems discussed had no precedents and there was no established practice to provide guidance. The nature of the records which must be maintained in such a center as well as in the participating libraries is indicated by Miss Osborn. It is expected that an analysis of costs will be made later.

From the Editorial Committee of the American Library Association has come a suggestion that the history of cataloguing and cataloging methods is an area for research projects which might be undertaken by students in library schools. It is pointed out that there is no history of cataloging beyond 1850, the terminal date of Dorothy M. Norris's A History of Cataloguing and Cataloguing Methods. This is an important suggestion not only for students of cataloging but also for students of library history in general. The history of individual library catalogs and catalog departments, of persons who have contributed significantly to bibliography and cataloging, will provide material for the general history of library development. It will also demonstrate the extent to which we are indebted to our predecessors of past eras for our present practices and accomplishments.

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34. Kingery, op. cit.


Research and Developments in
Documentation

JESSE H. SHERA

He who undertakes the task of describing research in librarianship soon finds himself in a position not entirely dissimilar to that of the German scholar who began his two-volume treatise on "The Snakes of Ireland," with the assertion "Strictly speaking, there are no snakes in Ireland." To the often-repeated charge that there is very little research in librarianship the field of documentation is scarcely immune.

"Research" is, of course, a slippery word, and all that masquerades under that title is not properly so. As here defined, research is that form of human activity whereby answers are sought, with as great an approximation of truth and accuracy as human knowledge makes possible, to basic or fundamental questions concerning the phenomena of the universe. Research is not concerned with the trivial and unimportant; it is much more than mere fact-finding; it is pursued by means of the application of certain accepted methods or procedures which, in the light of experience, seem most likely to produce truthful results, and its end is the advancement of human understanding.

The building of a new machine or the designing of a new system is not research; it is invention or development, though it may be based upon the findings of research. The ascertaining of a well known fact—i.e. the atomic weight of silver—is not research but "reference work," though the fact revealed may, at one time, have been the product of research. The promulgation of a questionnaire and the tabulation of the answer are not research, though they may occupy valid places in the research process. Research is usually thought of in terms of analysis, though synthesis may also play a vital role in the research process. Therefore, to be identified as such, research is to be known by the materials it works upon, the methods it employs, and the ends it seeks. It is governed only by the principles of integrity and objectivity, and it rejects all authority except that of valid evidence. Prop-

Mr. Shera is Dean, School of Library Science, Western Reserve University.
erly used it lies at the very foundation of all knowledge and understanding; prostituted, it becomes only a sacred cow that gives no milk.

The third element in the title to the present essay, "documentation," refers to that form of bibliographic organization, or librarianship if you will, that is concerned with the systematic mobilization of the total graphic resources of society for improving the scholarship of the culture. Stated somewhat more precisely documentation may be defined as that aspect of librarianship which is concerned with the organization and dissemination of graphic records for their most efficient use within and among groups of specialists to the end that they will receive, in a manner as effective as possible, the data and other information that they require for the prosecution of their work. In this ancient catalysis between man and the written word the documentalist and the librarian are specialists, each in his own right, in the communication of recorded information. The investigator, or research worker, and the documentalist, then, are both engaged in activities directed toward the advance of human knowledge, the one with extending the boundaries of knowledge and the other with making that knowledge more socially useful. They are natural partners in a team dedicated to the advancement of human understanding. In a world in which progress is so heavily dependent upon the effective use of recorded information, why has so little attention been directed toward those forms of research that will increase man's understanding of the ways in which knowledge grows and is utilized and the methods by which the processes of utilization may be augmented and improved? The past record of research in documentation and librarianship is not one to inspire confidence in an early solution to the many vexing problems which must be solved before the swelling flood of graphic records is effectively harnessed.

This essay describes trends in current research in documentation through an analysis of research in progress. During the past year, two surveys of research and development in the field of documentation have been conducted. One was the work of Mrs. Helen L. Brownson and Miss Madeline M. Berry of the Office of Scientific Information of the National Science Foundation, the other was prepared by the Committee on Research and Development of the American Documentation Institute, under the direction of the committee chairman, Saul Herner of Herner, Meyer & Co., Washington, D.C. To both of these surveys the present writer is heavily indebted, though to their data he has made some additions of his own. (The National Science Foundation
survey was prepared for internal use and has not been published. The report of the A.D.I. Committee, which makes extensive use of the N.S.E. study, is scheduled for publication in *American Documentation*, and it is the hope of the Herner Committee that its survey will be continued on an annual basis.)

Probably no survey of research in progress is ever entirely complete; there is always at least one significant project that lies quietly hidden only to arise wraith-like from its self-inflicted obscurity to haunt the compiler at the most embarrassing moment. Nevertheless, sufficient care has been expended on this listing to make it a reasonably reliable source for identifying the general contours of current research and development in documentation.

The present roster lists seventy-six studies in progress, or just completed, as of the end of the first quarter of the present calendar year. In addition to the data compiled by Mrs. Brownson and Miss Berry of the National Science Foundation, inquiries requesting information on studies in progress were sent to sixty scientific, technical, and professional societies; to deans or directors of approximately fifty library schools; to the editors of an equal number of library and documentation journals; and to twenty-four industrial firms known to be actively interested in the field. The tabulation indicates that, numerically, the burden of research and development in documentation is being largely carried on at the library schools and at industrial and business organizations. The figure for the library schools is, however, very deceptive in as much as there is a heavy concentration of work in a limited number of institutions.

Only nine projects are listed as being directly under government auspices, but this figure, too, must be judiciously interpreted, because many of the other projects being carried forward by both profit and non-profit organizations are subsidized by substantial grants from the federal government. It would seem to be conservative to say that probably more than seventy-five per cent of the work in this field is government supported; and, in terms of dollars invested, the proportion might well be even higher. It is interesting that only one public library has listed a project, yet in many of the larger metropolitan libraries the opportunities to study and make use of documentation techniques are manifold. This lack of interest on the part of “traditional librarianship,” in the new potentialities inherent in documentation may explain why practicing librarians seem to be contributing little to the development of this field.

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TABLE I  
Research in Documentation by Type of Sponsoring Organization

<table>
<thead>
<tr>
<th>Type of Organization</th>
<th>Number of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library Schools</td>
<td>26</td>
</tr>
<tr>
<td>Business and Industrial Organizations</td>
<td>23</td>
</tr>
<tr>
<td>Universities and Other Non-Profit Organizations</td>
<td>16</td>
</tr>
<tr>
<td>United States Government</td>
<td>9</td>
</tr>
<tr>
<td>Private Individuals</td>
<td>2</td>
</tr>
</tbody>
</table>

Total 76

The survey included, in accordance with pre-determined policy, those "projects involving research, development, or testing in eight aspects of documentation—organization, processing, production, dissemination, storage, retrieval, equipment, and use and user needs." The final listing has been categorized by the Committee into eight classes which, in general, conform to the above areas, but which are not entirely mutually exclusive or discreet.

TABLE II  
Classification of Research Projects by Subject Groups

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of Information and User Requirements</td>
<td>17</td>
</tr>
<tr>
<td>Indexing, Cataloging, and Classification</td>
<td>14</td>
</tr>
<tr>
<td>Coding for Mechanized Searching Systems</td>
<td>13</td>
</tr>
<tr>
<td>Equipment for Information Storage, Retrieval and Reproduction</td>
<td>12</td>
</tr>
<tr>
<td>Theory</td>
<td>8</td>
</tr>
<tr>
<td>Mechanical Translation</td>
<td>6</td>
</tr>
<tr>
<td>Production and Dissemination of Published Information</td>
<td>5</td>
</tr>
<tr>
<td>Education and Training for Documentalists</td>
<td>1</td>
</tr>
</tbody>
</table>

Total 76

Perhaps the most striking characteristic of the data in Table II is the relatively even frequency distribution of subjects throughout the major portion of the range. The very sharp drop-off in studies of theory is to be anticipated because of the relative difficulty in obtaining financial support for such investigations. Here is a lesson which those charged with responsibility for supporting research in documentation should heed. Though the study of the use and user requirements
Research and Developments in Documentation

constitutes the largest single category, it is still relatively small in comparison with the amount of attention being given to the design and construction of systems and related problems and techniques for making information available. This would seem to suggest that, like other librarians, documentalists have been quite willing to hypothesize use and to construct systems and devise techniques based on such hypotheses without objective knowledge of the ends to be met.

Perhaps, however, the most startling development revealed by these statistics, to one who has been associated with the documentation field for almost thirty years, is the shift in emphasis. Twenty years ago such a report as this would have portrayed great interest in methods of photographic reproduction, especially microphotography, and allied techniques. This is certainly no longer true, so far as the professional documentalists and librarians are concerned. Today the major burden of research and development in the areas of photographic reproduction have been largely assumed by the commercial manufacturers and their own professional organization, the National Microfilm Association. The Microphotographic Laboratory, established in the late 1930's at the University of Chicago by a grant from the Carnegie Corporation to explore, through an active research program, the potentialities inherent in microfilm and allied techniques, has long since abrogated its original mandate and become little more than a service agency for the sale of film. The same is true for the laboratory, established under a similar grant, at Massachusetts Institute of Technology. Thus, the day, when documentation was equated with microphotographic reproduction, has yielded to a new period in which the emphasis is on systems for information retrieval. Thus, too, did the original Journal of Documentary Reproduction re-emerge after the Second World War as American Documentation, with a considerably broadened scope.

No one would pretend, least of all the editor, that American Documentation accurately reflects the state of research among American documentalists. Nevertheless, an analysis of its contents over the past seven years gives some clue to the general pattern of interests in the field from which research activity and projects originate.

As Table III indicates, the dominant position of contributions dealing with the production and dissemination of recorded information is to be interpreted largely in terms of the early emphasis on microphotographic techniques. In more recent years there has been increasing attention given to indexing and other information retrieval systems, and to the coding of material for use in such systems. Articles on
TABLE III

*Distribution of Articles in American Documentation, by Subject, 1950-1957*

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</tr>
</thead>
<tbody>
<tr>
<td>Production and Dissemination of Published Information (Including Editing)**</td>
<td>16</td>
<td>22</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td>61</td>
</tr>
<tr>
<td>Indexing, Cataloging, Classification, and Abstracting</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td>11</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>43</td>
</tr>
<tr>
<td>General Surveys, Descriptions, and Bibliographies</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>—</td>
<td>4</td>
<td>9</td>
<td>3</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>Coding for Mechanized Searching Systems</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>27</td>
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<tr>
<td>Theory</td>
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<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
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<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Use of Information and Use Requirements</td>
<td>—</td>
<td>—</td>
<td>1</td>
<td>2</td>
<td>—</td>
<td>—</td>
<td>2</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>Education and Training</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>Mechanical Translation</td>
<td>—</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td><strong>Total</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>203</td>
</tr>
</tbody>
</table>

* Includes only issues for January, April, and July.

** Prior to the beginning of 1952 this item was almost entirely confined to problems in the production of microfilming and micro-filming techniques, after that date there appeared relatively little on microfilming with considerable more attention to problems in dissemination, security, editing, etc.
### TABLE IV

**Distribution of Articles in the Journal of Documentation, by Subject, 1945-1956**

<table>
<thead>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General Surveys, Descriptions, and Bibliographies</td>
<td>12</td>
<td>5</td>
<td>14</td>
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<td>6</td>
<td>8</td>
<td>7</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>75</td>
</tr>
<tr>
<td>Indexing, Cataloging, Classification, &amp; Abstracting</td>
<td>2</td>
<td>7</td>
<td>3</td>
<td>4</td>
<td>-</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>47</td>
</tr>
<tr>
<td>Production and Dissemination of Published Information</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Planning of Documentation Centers, Libraries, etc.*</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Theory</td>
<td>1</td>
<td>-</td>
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<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Coding for Mechanized Searching Systems</td>
<td>1</td>
<td>-</td>
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<td>5</td>
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<tr>
<td>Education and Training</td>
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<td>1</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Equipment for Information Storage Retrieval</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
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<td>-</td>
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<td>-</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mechanical Translation</td>
<td>-</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Use of Information and Use Requirements</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<td>1</td>
</tr>
<tr>
<td>Preservation of Materials*</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td><strong>Total</strong></td>
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<td></td>
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<td></td>
<td></td>
<td><strong>168</strong></td>
</tr>
</tbody>
</table>

* Category does not appear in Table III.
equipment, mechanisms, and machines are, perhaps, fewer in number than one might expect. Over the years there has been a steady, but modest concern with theory. Though perhaps, one must admit that much of it might better be characterized as "theorizing," since conclusions are based more upon speculation and opinion, or conjecture, than upon any really fundamental research. Finally, the attention being paid to studies of use and use requirements is disappointingly small. Yet the vexing question still persists: How can effective systems be devised without a solid understanding of the uses to which they are to be put? Despite its position in the table, mechanical translation is arousing considerable interest among documentalists, but there are media other than American Documentation for the publication of work in this field that are better suited to its needs. Finally, in view of the great demand for documentalists at the present time, it is regrettable that more attention is not being paid to the study of their professional education and training.

The charge that a journal inevitably reflects the interests, enthusiasms, and biases of its editor is unquestionably valid, and American Documentation has had to endure no less than three in its eight short years of life. (V. D. Tate, 1950-51; Mortimer Taube, 1952; and the present writer from 1953.) Nevertheless, if one were to superimpose upon the pattern of contributions published in this journal, a profile of the subject distribution of papers presented at the annual meetings of the American Documentation Institute there would probably be no very significant variation. When documentalists meet they talk, in general, about the same topics concerning which they write and publish.

Table IV presents a comparable tabulation of subject distribution for the British Journal of Documentation which evinces some striking contrasts to its American counterpart. British concern with problems of classification stands out in marked contrast to the relative neglect of this fascinating subject by their cousins on this side of the Atlantic. They have also published a greater proportion than we have of articles describing documentation installations, surveys of the several aspects of the documentation field, and subject bibliographies. On the other hand, American documentalists have emphasized the design of systems, with particular emphasis on coding and the construction of codes for specific purposes. Both have seriously neglected basic theory, studies of use, and the professional education of documentalists. Research, as defined at the beginning of this discussion, is poorly represented in both tables. Americans, perhaps, because of their insatiable
Research and Developments in Documentation

appetite for gadgets and mechanisms, have emphasized, much more strongly than the British, the techniques of documentary reproduction, especially microfilm and micro-opaques. The typical American documentalist, too, has almost an aversion for traditional methods, whereas in England, published materials treat some aspects of traditional librarianship as properly belonging in the province of the documentalist. This may, in part, be explained by the fact that in the United States the Special Libraries Association and the American Documentation Institute are separate and distinct organizations, in Great Britain the two are united in a common organization, Aslib, which sponsors the Journal of Documentation. Even the point of view of the archivist has infiltrated the documentation field in England, and there is some consideration, in the pages of the Journal of Documentation, of the problems of document preservation and repair. It may well be that the documentalist and the archivist have much more in common than is generally realized, at least among Americans.

Finally, and distressingly, both groups know that it is far safer and easier to describe, than it is to analyze, measure, and evaluate, and that speculation is more intriguing than the slow tedious drudgery of research.

From the sources mentioned in the preceding pages, the following roster of current research and development projects in documentation has been prepared. It represents, in so far as is possible, the situation as of April 1, 1957. The descriptions are given as presented by the respective authors.

Coding for Mechanical Searching Systems

A study of means for organizing the subject content of patents to make them amenable to machine searching. (D. C. Andrews and B. E. Lanham, and Associates, U.S. Patent Office)


The development of a mechanical searching code by means of an analysis of a significant sample of the collection being organized, the collection of concepts into related classes, and preparation of a thesaurus-like index to the documents. (H. P. Luhn, Engineering Laboratories, International Business Machines Corporation, Endicott, N.Y.)

The study of structural relationships between the ideas in documents in large collections, with a view toward making indexing codes more amenable to mechanical searching devices. (Calvin Mooers, Zator Co., Cambridge, Mass.)

Coding system for the mechanical storage and retrieval of information on chem-
JESSE H. SHERA


The development of a general searching system embodying completely automatic conversion of the language of a reference to its syntactic-topological equivalent and retrieval by high-speed, large capacity, computing machines. (same)

The development of a machine language for information storage and retrieval (J. W. Perry and Allen Kent, School of Library Science, Western Reserve University, Cleveland, Ohio)

Study of mechanical aids in special classification systems. (Allen Kent, J. H. Shera, Western Reserve University, and Classification Committee of the Special Libraries Association)

The encoding of classification systems for mechanized searching and correlation. (Rosella Busemeyer, in collaboration with Center for Documentation and Communication Research, Western Reserve University.)

The encoding of subject indexes for mechanized searching and correlation. (same)

The indexing and coding of metallurgical literature for testing the possibility of searching by means of computer-like devices. (Perry and Kent, same)

Comparative evaluation of coding schemes for mechanized information storage and retrieval systems. (W. J. Turanski, Remington Rand Univac, Philadelphia, Pa.)

The design of mechanized storage and searching system for agricultural chemical information. (W. M. Waldo, Monsanto Chemical Co., St. Louis, Mo.)

Equipment for Information Storage, Retrieval, and Reproduction


The development of a device for the selection of specific frames on a microfilm reel, and the development of a code for identifying and searching frames. (L. M. Bohnert, Federal Telecommunications Laboratories, New York, N.Y.)

The development of a "data-taking" and "date-retrieving" mechanism which duplicates the perceptual, motor, and mental function of the human nervous system. (J. R. Bussey, Sandia Corporation.)


The development of the Minicard system of information storage and retrieval. (Eastman Kodak Co., Rochester, N.Y.)

The development of a microimage data storage and retrieval device that provides rapid access to information-containing frames recorded in miniature on a ten-inch square sheet of microfilm, automatically searching the microfilm, and printing out one frame every two seconds. (M. L. Kuder, U.S. National Bureau of Standards, Washington, D.C.)
Research and Developments in Documentation

A high-speed printer, utilizing ferromagnetography. (Robert D. McComb, General Electric Company, Schenectady, N.Y.)

The testing of commercial date-processing machines for the storage and retrieval of information. (A. Opler and T. R. Norton, Dow Chemical Co., Midland, Mich.)

The design and construction of an experimental computer-like machine for testing mechanical searching codes. (J. W. Perry and Allen Kent, School of Library Science, Western Reserve University, Cleveland, Ohio)

Study of automatic correlation of recorded information for purposes of commercial intelligence. (Staff, Center for Documentation and Communication Research, same.)

Development of an association of ideas machine. (Mortimer Taube, Documentation Inc., Washington, D.C.)

The development of a combination of a "Peek-a-Boo" searching system using microfilm. (W. A. Wildhacker and J. Stern, Division of Basic Instrumentation, U.S. Bureau of Standards, Washington, D.C.)

Indexing, Cataloging, and Classification

The conversion of manipulative indexes, such as punched cards, into non-manipulative indexes in book or catalog card form. (Charles L. Bernier, Chemical Abstracts Service, Columbus, Ohio)

A study of the syntax and morphology of subject headings. (J. E. Daily, School of Library Service, Columbia University, New York, N.Y.)

The indexing of publications in psychiatry, psychoanalysis, and mental health. (A. Grinstein, M.D., 18466 Wildermere Ave., Detroit 21, Mich.)


The drafting or adaptation of a classification scheme suitable for the arrangement of entries of bibliographies in the Social Sciences. (Barbara Kyle, Social Science Documentation, London, W.1, England)

An analysis of the index to the Canadian Labour Gazette to determine the use to be made of it, the user's needs, and means for improving the Index. (B. Land, Library School, University of Toronto, Toronto, Canada.)


A study of the cataloging of publications in microfilm form. (S. Ross, Library School, Florida State University, Tallahassee, Fla.)
Development of an indexing abstracting system for Development and Proof Services, Aberdeen Proving Grounds. (J. W. Perry and Allen Kent, Western Reserve University, and Madeline Berry, National Science Foundation, Washington, D.C.)

Revision of subject headings for Dissertations Abstracts, University Microfilms, Inc. and Association of Research Libraries. (Robert Booth, School of Library Science, Western Reserve University, Cleveland, Ohio.)

Association of ideas in indexing. (Mortimer Taube, Documentation Inc., Washington, D.C.)

A study of the principles of classification and indexing. (B. C. Vickery, Imperial Chemical Industries, Akers Research Laboratories, Welyn, Hertz, England)

Mechanical Translation

A study of codes necessary for mechanical translation. (E. Dostert, Institute for Language and Linguistics, Georgetown University, Washington, D.C.)

The development of a memory device to be used for a mechanized Russian-English dictionary. (G. W. King, International Telemeter Corporation, Los Angeles, Calif.)

The design of a mechanical translating process which will make possible the translation of foreign language material into precise stylistically current English without human editing. (A. Koutsoudas, Project Michigan, University of Michigan, Ann Arbor, Mich.)

The automatic encoding of terminology. (Staff, Center for Documentation and Communication Research, School of Library Science, Western Reserve University, Cleveland, Ohio)

The development of a machine memory for the automatic translation of Russian into English, and the preparation of an index to a Chinese dictionary, to serve in the future for machine translation projects. (E. Reifler, University of Washington, Seattle, Wash.)

The analysis of German for mechanical translation. (V. H. Ingve, Massachusetts Institute of Technology, Cambridge, Mass.)

Production and Dissemination of Published Information

The distribution of meteorological data on Microcards. (O. M. Ashford, World Meteorological Organization, Geneva, Switzerland.)


A study of the need for preserving primary scientific records in anthropology and psychology. (B. Kaplan, National Academy of Sciences, National Research Council, Washington, D.C.)

Canadian Library literature indexing project. (Irene McAfee, Canadian Library Association, Montreal, Canada.)

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The bibliography of Newfoundland and Labrador. (Agnes C. O'dea, study being conducted under a grant from the Carnegie Advisory Committee for Newfoundland Historical Research, Memorial University of Newfoundland)

The Use of Information and User Requirements

A feasibility study to determine the possible application of operations research methods and techniques to devising means for the improvement of scientific information. (R. Ackoff, under grant from the National Science Foundation, Operations Research Group, Case Institute of Technology, Cleveland, Ohio.)

A study of public library reference services including an investigation of the types of use made of such services. (Frances N. Cheney, Library School, George Peabody College, Nashville, Tenn.)


A study of the use of domestic and foreign information by American medical scientists. (Same)

A study of user language, viewpoints, and information requirements by means of the analysis of reference questions. (same with S. Herner)

A questionnaire survey of the use of the library catalog. (S. Jackson, Brooklyn Public Library, Brooklyn, N.Y.)

A survey of the ways that industrial and governmental organizations obtain access to recorded information to support the decision-making processes in the planning and administration of business and research. (Allen Kent, Center for Documentation and Communication Research, School of Library Science, Western Reserve University, Cleveland, Ohio)

Survey of centralized vs. individual information processing, abstracting and indexing, in the United States. (Same with Robert Booth)

Study of documentation needs of members of American Chemical Society. (same with Division of Chemical Literature of the American Chemical Society)

An analysis of the variety of services offered to scholars in the development of special collections, use of interlibrary loans, utilization of microfilm and other media, as well as the problems of availability and accessibility of research materials. (M. Kroll, Library School, University of Washington, Seattle, Wash.)

A survey of the documentation resources available to social scientists in the libraries of London, and possibly elsewhere in the United Kingdom. (Barbara Kyle, Social Science Documentation, London, W.1, England)

An investigation of possible relationships between creativity and information seeking patterns among a group of chemists in an industrial research laboratory. (R. D. Maizell, Olin Mathieson Chemical Co.)

An interview analysis of the flow of information among scientists in chemistry, biochemistry, and zoology. (H. Menzel, Bureau of Applied Social Research, Columbia University, New York, N.Y.)

An operations research analysis of library operations and library use. (P. M. Morse, Massachusetts Institute of Technology, Cambridge, Mass.)
A study of the literature resources in psychiatry, with the objective of defining research problems in this area. (T. H. Rees, Jr., Center for Documentation and Communication Research, School of Library Science, Western Reserve University, Cleveland, Ohio.)

A study of the possibility of diary methods to ascertain the information-gathering habits of scientists. (Ralph R. Shaw, U.S. Department of Agriculture, Washington, D.C. now with Graduate School of Library Service, Rutgers University, New Brunswick, N.J.)


Theoretical Studies

A study of the theories of information search systems. (Y. Bar-Hillel, Hebrew University, Jerusalem, Israel)

Development of a general theory of documentation and the development of searching strategy. (J. W. Perry, Allen Kent, and staff of the Center for Documentation and Communication Research, School of Library Science, Western Reserve University, Cleveland, Ohio)

The development of a glossary for machine literature searching. (T. H. Reed, Jr. and Allen Kent, same)

The study of the morphology and development of the semantic code. (Perry, Kent, et al., with John Melton, John Carroll University, Cleveland, Ohio)

The systematization of rules and procedures for the preparation of telegraphic style abstracts. (Center for Documentation and Communication Research, with Jessica Melton, Cleveland, Ohio)

Development of a glossary for ordnance terminology. (Center for Documentation and Communication Research, with Margaret E. Egan.)

The development of a generalized information theory including storage and retrieval theory and communication theory. (Mortimer Taube, Documentation Inc., Washington, D.C.)

A study of methods for indicating relations among index entries, and for copying with interrelations of meaning, in searching systems. (Thyllis M. Williams, Washington, D.C.)

Education and Training of Documentalists

The training of documentalists, a portion of the study of education for librarianship. (J. H. Shera, and faculty of the School of Library Science, Western Reserve University, Cleveland, Ohio, under grant from the Carnegie Corporation of New York.)

Probably no aspect of librarianship is more amenable to research than is the field of documentation. The ends which it purports to serve are particularly receptive to research. The requirements of the user whom the documentalist serves and the ways in which he employs
graphic records are more subject to analysis and scientific generalization based upon observable facts than are, for example, the uses to which the so-called "general reader" puts books from the public library. The pathway by which the former threads his way through the swelling morass of print is, perhaps, less idiosyncratic than that of the casual reader, or even the "serious" user of books. The task of research in documentation is further facilitated by the fact that a majority of its practitioners are trained in the stern discipline of scientific method. Research is not, or certainly should not, be alien to their nature. The documentalist, if he is to be a scientist, should not cringe before the relentless verdict of valid evidence, nor shrink from an unpalatable conclusion.

Yet both the depth and the volume of research in documentation still remain disheartening. There are many areas which are still inadequately explored. Still far too little is known about the use of graphic records by the scholar, and the possible effects upon our society of failure in recorded communication. The basic theory of documentation has suffered from excessive speculation. Systems have been recklessly devised and promoted with an abandon that disregards any evidence of their effectiveness or efficiency. Automation, which has brought such impressive technological advance in many fields, is often decried by documentalists, and, conversely, "machines" have been foisted upon a naïve public with little evaluation of their capabilities and limitations. Classification, as a fundamental tool of documentation, has suffered neglect and often, disparagement. In the face of a seriously acute shortage of trained documentalists and the demand for new skills which are certain to follow in the wake of automation, there has been but slight attention to the professional education of the documentalist. Perhaps worst of all, the entire field is sickled-o’re with the pale case of bias, prejudice, "huckstering," and polemics. Documentation is wallowing in a sea of claims and counter-claims, with no foundation in solid fact.

Further, the documentalist cannot live alone, he must, quite literally, draw his sustenance from many disciplines and a variety of technical developments in a great cluster of related fields. Thus, the contribution that can be made to documentation by information theory, by symbolic logic, by switching theory, by operations research, and by communication theory, to name but a few, must be carefully explored. One may properly assume that each has a contribution to make toward improving the utilization of recorded knowledge, but until a far more extensive program of research, than has yet been undertaken, is carried
through, the nature of the contribution each has to make can be but
dimly perceived.

But of all the criticisms that may be brought to bear against re-
search in documentation the most serious is the neglect of funda-
mentals. As a profession documentation is threatened with a potential
exhaustion of its store of fundamental knowledge, and lacking such a
reservoir of new theory its literature becomes repetitious, its tech-
niques sterile, and its progress attenuated. There may soon come a
time when documentation can no longer advance for the simple reason
that it is lost as to the direction which such advance should take, and
only a well defined program of fundamental research will restore the
sense of direction.

The reasons for this neglect of the fundamental are not difficult to
discover. The swelling flood of recorded information has brought
outcries of desperation from those who are threatened with inundation.
There is an ever-increasing and often irresistible demand for
immediate and practicable solutions that promise hope of rescue.
Often those who suffer most are least patient with the theoretical, and
it is difficult to convince them that the only true solution to their
difficulties lies in greater attention to, and support for, fundamental
research. As the present writer has previously said:

. . . only through such fundamental research will those who seek to
advance the science of documentation be free to explore wherever or
whatever their best judgments dictate. The great fountainheads for the
support of research—industry, government, the foundations—must
recognize that pure research seldom emanates from immediate prac-
tical needs. They must not always ask to see the end foreshadowed in
the beginning; they must not always demand immediate and tangible
results. They must have courage to invest in the future, fortitude to
withstand occasional failure, patience to await results, and faith in
the ability of fundamental research to discover the best path. Where
there is no vision a profession cannot prosper. A sedulous dedication
to the exploration of fundamentals is vital to documentation, and in-
deed it is this that distinguishes the true profession from the craft. 8

Fortunately there is some evidence of an awakening awareness of
the importance of research, especially fundamental research, to the
future of documentation. Admittedly, mere talk does not solve many
problems, but interests and concerns that become vocal have greater
opportunity for serious consideration than those which remain un-
articulated. The size and character of the audiences that participated
in the two recent Cleveland symposia (Conference on the Practical
Research and Developments in Documentation

Utilization of Recorded Knowledge, January 1956. Symposium on Systems for Information Retrieval, April 1957.) eloquently testify to the diversity of interests which have a vital stake in documentation, and where there is general concern the probabilities for constructive action are immeasurably increased. In short, perhaps the most significant feature of these conferences was the simple fact that so many people came to them, people from a great diversity of fields and with a wide variety of needs. It is heartening, too, that so much energy and so many resources are being expended in the promotion of the International Conference on Scientific Information to be held under the auspices of the National Academy of Sciences, the National Research Council, the American Documentation Institute, and the National Science Foundation, and planned for the autumn of 1958. If this conference fulfills its promise it should be a powerful force in promoting research in scientific documentation. In this connection, one should also mention the renewed vitality of the Committee on Research and Development, (under the chairmanship of Saul Herner) of the American Documentation Institute, the expanding program of the Division of Chemical Literature of the American Chemical Society, and the increased interest in documentation evinced by the Special Libraries Association and its newly-formed Documentation Division.

Motivated by the participants at the first Cleveland conference, there was formed in the early autumn of 1956 the Council on Documentation Research which is composed of representatives from over thirty professional, governmental, industrial, and educational organizations which have already recognized the inadequacy of today's techniques for the storage and retrieval of recorded knowledge. The organization has a four-fold objective:

1. To promote understanding and cooperation among those who produce, organize, and use recorded knowledge of all types and in all fields.
2. To assist in the identification and clarification of problems common to those who produce, organize, and use information in diverse areas.
3. To promote research and development in documentation.
4. To encourage exchange of information concerning developments in principles, systems, and equipment for the effective organization of graphic records.

If the American Documentation Institute expands its concern with research, one may anticipate a consolidation of the Council with it,
but at the present time the two organizations appear to meet somewhat different needs.

Without financial support research in any field can make little progress, however enthusiastically it may be championed, and to this documentation is no exception. Harassed by the growing problem of the need to use efficiently the essential body of recorded information, industry and business are increasingly making funds available for the improvement of palliative measures. At the present time unfortunately little of this is available for fundamental research, but it may prepare the way for more theoretical exploration. The growing awareness on the part of enlightened management of the importance of the documentation problem gives reality to the prognostication of a time when a vice president in charge of information may be an essential officer in every major commercial and industrial enterprise.

Government, especially the federal government and its agencies concerned with the armed forces and intelligence generally, is, perhaps, even more alert to the importance of documentation than industry and trade. It is increasingly making substantial amounts of money available for documentation research, with considerable regard to the need for the support of fundamental research as well as for development.

Most important of all, however, are those agencies created for the specific purpose of disbursing funds for the support of activities dedicated to improving man's knowledge. The many benefactions of the Carnegie and Rockefeller Foundations are well known to librarians, and there is now some evidence that they may be turning their attention to the more specialized field of documentation. More directly concerned and more immediately active, however, is the Division of Scientific Information, under the leadership of Alberto Thompson, of the National Science Foundation, which is supporting a number of projects in documentation applied to the science fields, and which, in May, 1956, sponsored a conference at Endicott House in Cambridge, Massachusetts, at which were brought together some thirty representatives of a wide variety of scientific disciplines in the hope of formulating a program of research in documentation that would enlist the contributions of such fields as electronic engineering, information theory, linguistics, and others. Exploratory discussions of this kind are of great value if they are to be supplemented by a program of activities that will carry forward their recommendations.

Perhaps, most important of all, however, was the creation about a year ago, of the Council on Library Resources, Inc., supported by a
five-year grant from the Ford Foundation, and under the directorship of V. W. Clapp. At the time this is being written the initial grants of the Council have not yet been announced, but one of its stated objectives is "through grants-in-aid to institutions and individuals, to identify the problems which now present obstacles to efficient library service, and seek to find methods for overcoming these impediments through the development of new procedures and the application of technological developments."

The responsibility of the documentalist to perfect his techniques and methods may be far more urgent than even he himself realizes. In Eastern Europe a great giant has, at long last, shaken off the shackles of feudalism and put scientific and technical knowledge to work with all the power of dictatorship. Today the English-speaking peoples of the earth face a new threat of world economic conquest and the domination of men's minds. Much has been heard of late concerning the growing superiority of Soviet science, and the extent to which it may be outproducing ours, not only in the manufacture of instruments of war, but also in the development of peaceful applications of scientific research. The American press has issued alarming reports of Russian pre-eminence in the training of scientists and engineers, and the alleged success of Soviet planning in its relentless drive toward world leadership.

At least partially in substantiation of these claims there have recently appeared three publications prepared by members of the Academy of Science of the U.S.S.R., and issued in Moscow. These indicate that Soviet documentalists have, by the application of documentation theory originally developed in the United States, devised experimental equipment for mechanized literature searching. Admittedly this equipment is still a prototype, or was when these publications were issued, and so far as is known here it lacks many of the capabilities which American documentalists believe to be possible for mechanisms of this sort. But it is well to be reminded that no secret is being made of this achievement, and one can leave to his own conjecture the amount of such Soviet progress that has not as yet been publicly reported.

On our ability to prosecute fruitful research and development in documentation may rest the very future of our civilization and the perpetuation of our cherished way of life. We are today engaged in a grim game; we may not long hold all the high cards, if indeed we do now. Research in documentation is more than an intellectual game pursued for the love of the sport and the intellectual excitement that
it may engender. The documentalist of today bears a burden of responsibility far heavier than any known to his predecessors; he may even hold the key to the future of mankind.

References


Research in Education for Librarianship

LOWELL A. MARTIN

Research produces knowledge. Knowledge is needed for understanding. Understanding combined with skill leads to effective action.

It is hardly necessary to add that this neat progression from inquiry to decision is not the natural law of life. On the contrary, the process often works in reverse. Aristotle did not say that the rational life is prevalent; he simply said that it is best.

The man of action starts with decision and not with inquiry, and he may display limited understanding and actually scorn research. The intellectual lives in the sphere of understanding, gained through background and insight; he expects action to correspond with understanding (and because it does not is often at odds with life around him) and he expects research to confirm his previous insight (and because of this is often not a good research man). Confronted with a job that needs doing, the practical man acts, the intellectual reflects, only the research man investigates. This is an oversimplification, for in practice the several levels do and indeed should run together.

But this formulation reminds us that conduct based on inquiry is neither typical nor natural, but takes special effort and discipline. These distinctions provide a framework within which to place research in education for librarianship. And they serve to warn us that library education will be unusual if research has played a major role in its development.

Formal training for library service grew directly out of practice. The early librarians learned by doing. When enough individuals sought to learn at once, training classes were established within libraries. Instructional content was defined by the tasks then performed in libraries, and instructional method followed actual or simulated field conditions. When library education later moved into formal institutions of education, much the same content and method moved with it.

Mr. Martin is Dean, Graduate School of Library Service, Rutgers University.
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If anyone thought in those early stages about the justification for the training provided, the answer would have been found in the last analysis in the instinctive actions of those who had determined the pattern of library service to that time. Today, many years after on-the-job training and training classes have passed out of the picture for the foundation education of librarians, some practitioners still measure library education by the extent to which graduates can perform immediately in any given job. And it is worth commenting that unless the library educator can provide a better base upon which to build professional education, he must be prepared to meet the test of practical action. It is of little avail for him to say that there is a better basis for instruction, in theory and principle, unless he has clearly identified and tested that theory and principle.

With the C. C. Williamson report, the background and understanding were urged as the basis of library education, rather than practice. Library schools moved to the centers of background and understanding, the universities, and away from the centers of applied instruction, the training classes and the institutes.

For thirty years now there has been a push and pull between application and understanding as the touchstones of library education, and the issue is not settled yet. Too often the question is posed as one of either theory or practice. Actually, if it is to be professional, library education must learn how to go deeply into theory on the one hand and how to teach skill and judgment in the application of theory on the other, but this is the subject of another paper.

The point here is that if the schools are to depend upon theory and understanding at all in library education—and for a quarter century now they have increasingly adopted this approach—then the depth and quality of instruction depends directly on its foundation in research.

Not exclusively on research. Ours is a practical art, and inspiration, intuition, sensitivity should be no more ruled out of the library classroom than out of the library. Understanding comes from insight as well as from investigation.

But directly on research. For the principles of librarianship established by research are those that can actually be conveyed in the educational setting, while understanding through insight comes from the total experience of the individual. Courses and teachers are part of this total, but only a part. The rare teacher may inspire; every teacher must impart content.

It is not too much to say that if research has produced a body of
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tested principles in librarianship, then library education moved wisely in turning from practice to understanding. But if research has not produced sound professional theory, then library education based on instruction by principles would be at best premature and at worst downright confusing. Actually of course, some principles have been established in librarianship, and the question is whether they add up to an intellectual discipline strong enough to bear a structure of professional education.

An illustration will serve to show the difference in library education depending on the presence or absence of verified knowledge based on research. Any one who has taught or studied library administration knows the sense of security and accomplishment that comes in handling the unit on library government with the help of such a study as C. B. Joeckel's Government of the American Public Library, as compared with the uncertainty and inconclusiveness that prevails in dealing with a unit on library departmental organization where only a range of professional opinion is available. It is not that Joeckel supplies the answers for library government. He simply gives the facts for a given period, interprets these facts for their meaning, and isolates the factors that influence government one way or another. The student comes out of this unit, thanks to Joeckel, with ability to identify situations in the field, to analyze them in the light of what deserve to be called "principles," and to devise ways and means of improvement in relation to local circumstances. While it will carry us ahead of our story, it is worth remarking that one is hard pressed to find other research studies that give an equal framework of knowledge to parts of the library curriculum.

In a sense, then, the several other papers in this issue of Library Trends are part of any broad consideration of research in library education. To the extent that the various papers report a substantial body of research, library education stands on a sound foundation, and to the extent that they point to a continuing program of research the foundation will be strengthened. The other papers are therefore the most important part of any analysis of research in library education.

This paper will confine itself to a more narrow view, the research already done, and the research needed, in library education itself. The present statement will not treat the results of investigation that have been brought into the library curriculum, but rather research about library education—its purpose, structure, content, method, personnel, and results.

To what extent has the prevailing pattern of library education re-
sulted from research in the past? To what extent is library education being brought under the light of research today?

Any answer to these questions obviously calls first for consideration of what will be admitted as research. In a certain broad sense, any responsible pronouncement is based on a kind of research in that the proponent has looked around him and his conclusions are based in part upon what he has seen. In a narrow sense, research might be limited to a process of securing new and reliable data by recognized methods of investigation and of drawing conclusions limited solely to these data. For present purposes it would seem best to adopt a middle ground, admittedly ill-defined, which would admit any considerable degree of systematic study used at least partially as a basis for conclusions, but which would exclude purely personal pronouncements grounded solely in the general impressions of the individual.

On this basis, the commentary of Ralph Munn in the mid-thirties will not be included in this analysis, nor the later reports of J. L. Wheeler and J. P. Danton. The Programs for Library Schools of E. J. Reece is similarly outside the present scope, on the grounds that this is a personal attempt to project the desirable content of library education, but the same author’s earlier and later reports on the curriculum and on future training of librarians are included in that one was based on a comprehensive study of the growth of the curriculum and the other on systematic interviews with eighty librarians. Wilhelm Munthe’s pithy comments on library education? Let’s say they are somewhere on the borderline. They were based on a planned period of field study, so they are included here—possibly because for all their bite they reflect one important quality of research, balanced objectivity which sees both sides of the problem under examination.

It should not be necessary to add that exclusion of any report is not to dismiss it as worthless. The purpose here is simply to see to what extent systematic research into library education has been conducted and whether it has had an effect on the training of librarians. Nor should it be forgotten that research at best is an aid to judgment and not a substitute for judgment.

Interestingly enough, the one report that is acknowledged as having decisive influence on library education is based on research. The Williamson report set the path for university schools with instruction by means of professional principles, a path which has taken over twenty-five years for the schools to follow to the point where they can discern where it leads. He also pressed for full-time faculty mem-

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bers of distinction, in place of part-time practitioners, and urged that the first year of graduate instruction should be general and basic. His tenets have increasingly prevailed in the years since. Williamson's conclusions were rooted in extensive research, including data on faculty, students, and methods. He visited all the recognized library schools of his time.

From a certain view the many articles on education for librarianship which appeared in the following years were addenda to the Williamson thesis, with intermittent spicing in the form of contrary views which often took on an aggravated, shrill tone. One review of this writing listed no less than one-hundred seventy-one books, articles, and reports on the topic in the three year period, 1936-1939. Some of the pronouncements of these and other years were reasoned critiques, from those of Leon Carnovsky, Lucile F. Fargo and Munn in the thirties to L. E. Asheim and M. F. Tauber in the fifties. Very few gained depth and significance by virtue of research, despite the fact that this was the period when the Graduate Library School of the University of Chicago was bringing many aspects of library service under objective scrutiny.

The study of the curriculum by Reece in this period stands out for its thorough scholarship. He depended on literature, both primary and secondary, for the raw material of his analysis, so that his endeavor falls on the side of armchair research. Yet his material was new and he wove it together to tell a progressive story. His survey proved useful in the modest curriculum revisions of the late thirties.

Fifteen years after the data of the Williamson report, L. R. Wilson brought the picture up-to-date in a substantial article issued in 1937. He not only provided information about students, faculty, finance, and similar topics, but went a step further to examine the integration of the library instructional program with the university, and in general gave a critical review of library education in transition.

Where Reece depended on literature, Munthe went into the field, turning a fresh eye on the American library scene. Library education occupies no less than three of his nineteen chapters. Despite pointed criticism of the training of librarians, Munthe's balanced view is indicated by his summary remark, "Personally, I believe the library schools are better than their reputation." 20

The next decade saw no diminution of writing about library education, nor very little increase in research into it, even though the schools were moving toward a major modification in programs. Helen F. Pierce produced a substantial descriptive report on post-professional educa-
tion for librarians. Increasing interest in internships was reflected in reports by F. R. St. John and Esther L. Stallman. The K. D. Metcalf, J. D. Russell and A. D. Osborn study of the University of Illinois, while a case study in a sense, raised, if it did not answer, important questions about methods of library instruction. A few years later Reese quietly dug back again to the basis of library education, this time in systematic interviews over the country with leading librarians, and came up with a conception of the librarian as an information catalyst which has never had the attention it deserves. Toward the end of the decade, the University of Chicago devoted its annual institute to library education, which resulted in a series of papers notable alike for occasional flashes of insight (R. W. Tyler on the nature of professions, C. H. Faust on pre-professional education) and for its thin research foundation.

The Public Library Inquiry took a close look at the schools, as part of its appraisal of the public library in American society at mid-century. This report contains more extensive data about library education than had been available since the Williamson and Wilson reports. It came at a strategic time, immediately after substantial curriculum changes in the post-war period. The Inquiry report pretty well accepted the current substance of library education, and focused its recommendations on questions of size, number, and distribution of schools.

Within the past year Western Reserve University has received a grant from the Carnegie Corporation (which financed no less than five of the previous periodic surveys) for a study of library education. This investigation will proceed from a re-examination of the role of the library and librarian in society today, with particular reference to contemporary needs for communication of knowledge. Thus it goes beyond what library schools are doing, and beyond what libraries are doing, and in a sense assumes that neither the schools nor the libraries completely reflect present and emerging needs. This is a challenging and experimental approach; it will test the social insight of those conducting the study and the extent to which an institution will yield to its critics.

Library education in the period here under review moved from apprentice training to graduate university education. Did research aid or abet this development? Very possibly research in the principles of librarianship fed content back into the curriculum, so that an intellectual discipline was slowly constructed. But research directly on library education—its content, method, or results—seems to have
played only a minor role. At most it aided a few compelling judgments that had a discernible influence.

It has now been thirty years since the Williamson report, twenty years since the limited curriculum adjustments of the thirties, and ten years since the substantial changes in content and degree structure in the post-war period. The American Library Association has just completed its re-accreditation program for library schools based on standards resulting from the post-war changes. This would seem to be a good time to take stock on just where education for librarianship stands, and research is a prime means to this end.

There is need, first of all, for elementary facts about library education today, to add to the sequence of reports by Williamson, Wilson, and the Public Library Inquiry. A strong case can be made for having the next survey cover all centers for education for librarianship. The profession is not agreed on such an elementary point as the number of institutions providing training, and many librarians express surprise upon learning that the number may exceed five hundred. The number of students produced by the library training agencies each year is not known. Annual statistics are gathered by the American Library Association for the accredited graduate schools, which comprise less then ten per cent of the total agencies, but the other institutions seem somehow outside the professional pale. We would do well to find out the what, where, and who of the issue which we discuss so much.

Beyond the question of how much library education is going on is that of its content. In recent years a series of surveys has been conducted by specific groups—extension librarians, special librarians, etc.—to determine attention given to their particular field. For the most part these studies have been based on course titles, catalog course descriptions, or brief questionnaires which ask about number of class hours given to specific topics. Because the information obtained is usually superficial in character, very little interpretation can be made of the returns, and these studies have usually not been published.28

Certainly the examinations of content have not gone deep enough to answer some of the basic questions about library education that are pertinent at this stage. How does professional education for librarians relate to general and subject education? What actually is the common core that all librarians need? Has the curriculum expanded to include relevant new topics? And more basic than these, in view of the assumptions underlying library education for more than a quarter century, to what extent has a body of genuine prin-
ciple been identified and woven into a discipline that deserves to be labeled both graduate and professional?

Once the imagination is open to the possibility of research as a means to examine education for librarianship, a host of problems come quickly to mind. There exists not one but several different structures of general, subject, and technical education in preparation for library service, some requiring four years and some five. Occasionally the four-year and five-year programs are integrated, so that students may move readily from one to the other in a logical progression, but more often the two run parallel without a planned connection. How does this affect recruits—how is the connection made in actual practice—can steps be taken toward an integrated structure of library education in the country? Then there is the problem of the status of the library school in the university. The university setting has long been urged. What has been the result in courses and course content taken by students, in faculty utilized in the library school, in the relation of the library student to other graduate students? Or there is the cliché of the profession, that library-school instructors become isolated from practice, and retreat into ivory towers. Does this happen, or do faculty members actually develop less provincial views when moving from a single to a broader vantage point? If they do become isolated, in what respects, and how can this be overcome? Whenever these or other problems are raised, there is no lack of definite opinion on one side or the other, but the present writer has not been able to find objective studies supporting either side of the argument.

Research would also help the schools in turning in upon themselves, to look at methods of instruction. Library schools seek to teach a disparate body of materials and to achieve a wide range of results in students—a sense of purpose, knowledge of information and bibliographic sources, technical principles, judgment in applying principles, to cite only a few of the various different aims. While different teaching methods are used, still the degree of similarity of method in teaching such different subjects as library history, cataloging, and subject literature is striking. The class size in most library schools is of the standard size, twenty to thirty students. For imparting knowledge it is possible that this is smaller than it need be, and for developing individual skill it may be too large. Experimentation with other sizes might point the way to better instruction and better utilization of staff. One need only mention a type of course that is characteristic of the new curriculum, the “literature” courses in social science, science

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and humanities, to raise a welter of questions about purpose, scope, and procedure. Library educators have seldom stepped aside to gather data which would help in selecting among methods and improving those that are used. A recent evaluation of a library school testing program is an example of one of the many areas of study.\textsuperscript{29}

One sub-topic here deserves special mention. Librarianship is an applied profession; judgment in meeting individual situations in particular circumstances is the heart of its practice. Within the schools this quality of judgment is often not highlighted; the schools stress information and method, but not the modification and adjustment of these to the individual library, book, and reader. In library education a period of applied instruction controlled in part by the schools has not been developed to any extent (the earlier "practice" periods seldom promoted and tested professional judgment) and even this has been dropped in most instances, while other professions (medicine, social work, in part teaching) see it as the capstone of their preparation of practitioners. Either it has been assumed in library education that applied judgment is achieved in regular instruction covering knowledge and methods, or that its systematic development occurs through regular programs of induction and in-service training on the job—but whatever assumption accounts for this curious gap in education for librarianship has never been tested.

Any consideration of method leads to the question of results or outcomes. This ultimate and fundamental concern of education can not easily be reduced to research, whether for youngsters learning to read or for graduate librarians learning to help others to read. Yet in librarianship there is an opportunity to follow graduates through to performance. Granting that factors other than those dealt with by the library schools enter into performance, it should be possible to gain some information first from the graduates themselves and then from their supervisors. From time to time there have been follow-up studies on graduates of library schools, such as those of the University of Denver\textsuperscript{30} and the University of California.\textsuperscript{81} These have been quantitative reviews of the who, what, and where of graduates, with only limited attention to the relation between training and performance; they stop short of evaluating outcomes. Columbia University conducted such a study in its recent review of curriculum, but the results have not been made generally available. By observation of performance, under controlled conditions, it should be possible to get some insight into outcomes under different structures of professional education, different curricula, and different methods of instruction.
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Thus, there is ample room for increased research into education for librarianship. The need arises not only from the general consideration that all endeavor stands to benefit from objective analysis, but more particularly from the road which library educators have elected to follow. The decision has been made to seek out the theory and principles on which professional practice rests and to base instruction upon them. It would be a sanguine person indeed who could claim that this search has been consummated. Further, when it comes to application of theory and principles, while the conclusion seems inescapable that some agency or group of agencies should give attention to it, there is no agreement on whose responsibility this is, much less on how it should be done. The very variety of aspects of librarianship, ranging from broad considerations of scholarship and social purpose to precise technical methods, poses a complicated problem for the educator.

Thorough, systematic and useful research is never easy. Yet in research into library education there exists the laboratory for investigation, in the classrooms in which the student is taught and in the libraries in which he practices what he is taught, and there exists also the investigator, in the faculty member who has responsibility for objective study. He could do worse than start his research with an examination of what he himself does. If the efforts of faculty members in the various schools were to be coordinated, by the Association of American Library Schools or other agency, within a few years the library educator could throw light not only on his own work but on the profession of which he is a part.

It would not be too extreme to say that for all their revisions of curricula and degree structures, the library schools are not quite certain where they fit into the structure of higher education, not quite certain as to the content for which they are responsible, and not quite certain about the best methods for teaching this content. This is not intended as sweeping criticism, but rather as appraisal. Indeed, it would be strange and suspect if library education were without doubt and above reproach, for education is not an endeavor that should become self-assured and unchanging. The present stage of education for librarianship simply points to a great need for continued scrutiny by means of research.

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10. Williamson, op. cit.
17. Reece, op. cit., ref. 7.
20. Ibid., p. 137.

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Research in the School Library Field

ALICE N. FEDDER

The lack of effective means of communicating the results of research done in the various library schools has been one of the major frustrations associated with such research. Too often the fruits of studies have been available only to the students of the particular library school where they were originally done, or to those few people from other library schools or interested agencies who could afford to come where they could be examined.

Although this situation still pertains in too many instances, more research information is available than formerly. The indexing of studies has become more prompt and complete, due to the initiation of a recent cooperative plan by Library Literature with the major library schools of the country through the agency of the Association of American Library Schools. More library schools provide notes, explaining methods and indicating results, to accompany the thesis entries in this publication. In 1950 Library Quarterly began an annual listing by library schools of theses and dissertations accepted in partial fulfillment of the requirements for the master's or doctor's degree. It has been found that this annual compilation, although containing many of the entries to be found in Library Literature, does list supplementary thesis titles. Also, the English serial, Library Science Abstracts, with its excellent summaries, is a new factor in the availability of information about research. Not the least of its values lie in the differences of interpretation of aims and results because of its British point of view. The most important development, however, is the increasing availability of the research itself through the medium of microfilm.

The implications for research in the school library field by school librarians are clear. It will be reduced to that represented in the essays coming from the library schools still requiring theses, and to occasional theses or research reports from the remaining library schools. Without the incentive of thesis requirements at the master's level, the average

Miss Fedder is a School Library Consultant for the International Cooperative Administration Educational Project in Afghanistan.

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school librarian will produce little systematic research. Although he is in a school situation and may be experimenting with new techniques or making observations which could be expanded into a research project, the nature of his position militates against such studies. If his experiences are recorded in an article for a library periodical, that generally will be about the extent of his contributions to library literature. The average school librarian will find little need or incentive for Ph.D. programs. Research relevant to the school library field from these programs will come primarily from two sources—library educators in the school library field and supervisors of school libraries at the state or large urban levels. It is relevant here that the type of research done at the Ph.D. level, as evidenced by the studies at the Graduate Library School of the University of Chicago, differs considerably in scope and content from that done at the master’s level, much of which cannot truly be classified as research. It is at the Ph.D. level that some of the larger problems of school libraries, which Eleanor M. Witmer,¹ W. A. Heaps,² Leon Carnovsky,³ and Frances Henne⁴ have stressed as being worthy of systematic investigation, should finally receive the attention they deserve.

A study of the research from the major library schools over the period 1937–52 in the school library field reveals two patterns: one, the fairly frequent development of a group of closely related theses within a particular library school; the other, and more significant pattern, the reflection of the major problems confronting the school and the library profession in the investigations of a particular period. An example of the first type can be seen in the series of master’s essays at the Columbia University School of Library Service on the adequacy of reviewing media for various subject areas, ranging in content from that of chemical journals for college book selection⁵ in 1933 to book reviews for the selection of adult books for high school libraries⁶ in 1951. The evidence for the latter will be found in the following discussion of some of the research in the school library field at the major library schools within the last five years, and in the relation of this recent period to preceding ones. Some reference to pertinent literature other than theses and dissertations is included.

One of the persistent problems in the school library field relates to the distribution and nature of school library facilities. For the period 1927–47 Miss Henne⁴ estimated that surveys dealing with this subject constituted almost forty per cent of all studies. For 1948–52 the percentage has been much smaller, i.e., a little less than ten per cent. The principal importance of the latter studies, all of which deal with con-
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ditions in either the Middle West or the South, is the picture they give of gaps in school library service to particular groups. They destroy any complacency which might have resulted from Nora E. Beust's interpretation of the Statistics of Public School Libraries, for the situations described represent the realities of elementary school library service in cities of the size described by the statistics, and of school library services to Negroes in the District of Columbia and Virginia. Another survey describes the libraries of unaccredited Southern schools, most of which are in communities somewhat smaller than those represented by the statistical report.

Statistics have their values, but can be interpreted in many ways. For that reason there will always be room for the carefully prepared evaluative type of survey which presents the realities of a certain situation. Photographic views of school library quarters would also be useful for this purpose, and could be reproduced easily and exhibited to tell the public as well as the library profession of the contrasts in educational opportunity. The greatest need in this area is for a series of well-articulated regional evaluative studies covering all types of library service to children and young people. Such a national overview would be invaluable for planning and improving library service.

The line between the survey and historical research is a tenuous one at times, if it exists at all. An example of the difficulty of distinguishing between the two is revealed in Laurreta G. McCusker's study of accredited school libraries in Iowa, which combines a survey with a study of development. Another piece of work of this type is Frances N. Neal's examination of the services of the Arkansas State Library Commission to the schools of the state. Jean K. Gates traces the progress which has been made in both the school and public library fields in the same state during the last quarter century by means of county surveys of library facilities. Two historical investigations have shown the development of school libraries in the state of Kentucky. M. Louise Galloway has written a history of the public high school libraries from the establishment of a statewide system of high schools to the present time, and includes a brief survey of public education in Kentucky. Claridy has traced the contribution of state supervision to the development of Kentucky schools.

One of the most important contributions to the library field is the dissertation by the late Frances E. Hammit, School Library Legislation in Indiana, Illinois, Wisconsin: a Historical Study. Following a resumé of school library history with special reference to the Midwest,
she traced the legislative story of the school library in each of the three states against the background of their respective educational development. This study is marked by a quality unusual in such work—good literary style. Comprehensive and scholarly, Miss Hammitt's work provides the cornerstone for the long-proposed history of the school library.

In the area of organization and administration of school library services, thirteen studies were tabulated. They range in complexity from a plan for the organization of a school libraries division in the West Virginia State Department of Education to the kinds of shelving best suited to a school library. Sara M. Krentzman explored the problem of state supervision of school library service to determine what the position in a state department of education comprehends, and what the results of such supervision have been. Trean A. Maddox studied school library supervisory programs in city school systems to ascertain the supervisory functions and services carried on and needed in city schools, and the characteristics of good direction.

In 1943 Wilma Bennett proposed a plan for the administration of school library service in Indiana on a regional basis to promote better results at reasonable cost, without changes in governmental or school units and leaving initiative and control in the hands of local authorities. In 1945 in the adjoining state of Illinois, legislation was passed for the consolidation of school districts to produce the community unit district. In 1951 Viola L. James studied thirty of the resultant districts to determine whether an elementary school library program had emerged from this consolidation with a sufficiently definite pattern to be helpful for future planning. From the improvements in services and materials discovered in her survey, Miss James found a guide for planning betterment in community unit districts which had little or no provision for libraries in their schools. It is interesting to see in Miss James's report parallels to Miss Bennett's earlier proposals—the larger unit of service, the coordination of materials and activities, the centralization of stock and technical processes, the development of new services—although they are on a much smaller scale. Whether or not Miss Bennett's proposal had any influence in the development of libraries in this new type of consolidated district remains to be seen. Since it is quite generally agreed that it is only through larger units of services that educational opportunities in rural areas and small communities can be improved, Miss James's report is of value to school administrators as well as to librarians. Another study which should be of value in this connection is Elenora C. Alexander's
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study of budgetary procedures. Her findings could do much to eliminate those practices which hinder rather than encourage improvement.

In this day of expanding school facilities to meet the needs of a growing population, the research necessary to plan adequate library quarters for schools has come from an organization, the Subcommittee on Library Service to Schools of the Planning Board of the Illinois Library Association. Its publication, Planning School Library Quarters, is an interpretation of modern school philosophy in terms of physical requirements.

In the area of organization and administration, there remain many needs. The necessity and merits of elementary school library service are clear, at least, to school librarians. Studies should be made of the actual organization and administration of elementary school libraries, to determine whether or not they are an integral part of the school. The values of the elementary school library have been seriously challenged in Pennsylvania, and in one of the states of the Pacific Northwest, on the ground that they do not contribute materially to the schools' program. With rising prices, and the difficulties in providing adequate school monies from the present tax bases, the importance of getting the best use from funds available becomes markedly greater. To this end job analyses, examination of procedures, and cost analyses are essential. Further studies of the organization and operation of larger units of service, and determination of their strengths and weaknesses are needed to facilitate improved planning for the future.

The major portion of investigation for the period 1948–52 concerned the educational functions and activities of the school library. Without including the studies on reading, which will be considered separately, thirty investigations were tabulated by the present author. The term "investigation" is used advisedly, for some of the studies are little more than a loosely knit combination of experiences against a partial survey of the literature of the field. For that reason, only those studies which make a genuine contribution or with unusual subject matter will be indicated for bibliographical entry or discussed. The principal topics treated were the guidance functions of the library, particularly in the field of social adjustment, the place and training of student assistants in the library, and library instruction.

Ruth S. Itamura's study of the literature on administration of the secondary school, to discover the presentation given the high school library, is both encouraging and discouraging. Most writers consider high school libraries essential—one wonders sometimes if from con-
viction or from the existence of regional standards—but few suggest that the school library holds an administrative problem, and that the success or failure of the library program depends on the administration. Mary H. Mahar 29 has thoroughly explored the modern concepts of the educational function of the school library and has weighed them against the activities and services of a selected group of high school libraries which meet the A.L.A. standards for personnel, and where the school philosophy and program are such that progressive programs of service should be operative. Where there were obvious discrepancies, she attempted to ascertain causes. Helen C. Welsh, 30 a librarian of a vocational high school, has surveyed the quarters, holdings, and personnel of selected vocational high schools and has analyzed services to students and curriculum. The educational and service role of a student library club has been studied by Rachel W. DeAngelo. 31 In an investigation of correlated library instruction in secondary schools, Mary C. Calloway 32 discovered that although a large percentage of high schools offer instruction in library use, there was lack of integration of such instruction with either school programs or school objectives. Genevieve J. Geiger 33 studied the publicity activities in senior high school libraries reported by librarians, teachers, and student groups, and had the eighty-five activities reported ranked for educational value by eight specialists in the field. Her findings regarding the most educationally valid types of publicity activities are of special value to practicing school librarians.

In this day of challenge to education as a whole, any steps which can be taken to improve the effectiveness of the school library will help to insure better understanding of that part of the educational system and to bring better support financially and philosophically. As school library service is introduced into new places, "before-and-after" studies of the effects of the library on student reading interests, amount and quality of reading, responsibility for books and library materials, attitudes toward service, differences in kinds of classroom teaching, the use made of library materials, involving all the assumptions of values of the school library, need to be made.

In view of the public interest in the subject of reading, it is not surprising that the number of studies dealing with various phases of this topic in the period of this review of research equals that treating the other varied educational functions of the library. Twelve of the thirty investigations deal with the general reading interests of high school youngsters, and three with interests of this age group in specific areas. For the most part they are either very general in nature, or are so re-
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stricted to the limits of one school or of grade groupings within one school, to have comparatively little value to anyone outside the particular system. The one reservation here is that they may provide some future researcher a body of findings comparable with those of G. W. Norvell's twelve-year study on reading interests which, despite the volume of its data, is not considered definitive by this writer. Four studies in this field are concerned with books and remedial reading. A reflection of current interest in readability is seen in the two investigations of this topic.

A major contribution to the whole literature of reading is Miss Henne's Preconditional Factors Affecting the Reading of Young People. After assaying the status of reading in the curriculum, she analyzes the general characteristics of young people as readers, i.e., the time spent in reading and the amount and kind of reading. Each of the preconditional factors that presumably affect motivation and reading patterns —accessibility and availability of materials, purpose and motivation, and interests of adolescents—is discussed in a separate section, as are their implications for the secondary school library. These are in turn related to the identification of the school library's place in the reading program of the secondary school. The larger aspects of the matter, as related to national, regional, and local planning of school libraries, are identified and possible solutions suggested.

Each school, and each type of school—elementary, junior high, senior high, vocational, academic, university elementary and high—has its own reading problems. Some of the problems are common to all. Although there are generalizations which can be made about reading interests of children and young people, there are differences in the interests of the urban and rural child, and of youngsters living in the various regional and geographic areas. What does the child who is beginning to read actually select when given a wide variety of materials from which to choose? How does his reading differ from that of the child who has access to one basal reading set, or to a variety of such sets? Is there variation in the amount and kind of reading problems at any given school level among youngsters from these different backgrounds of reading experience? These are only a few of the subjects on which further research is needed.

Closely allied to the previous topics is that of materials for the school library. Of the seventeen studies concerning these, ten deal with the selection of books for various purposes, three with periodical choices and use, and four with audio-visual aids. As bearing on the first group, A Vocational High School Supplement to the Standard Catalog for
High School Libraries has greatest value at the present time. Margaret Welch, an experienced librarian in the vocational school field, has compiled this buying guide for her type of school. In addition, she has written a short history of such institutions and has discussed some of the particular problems affecting their situation. Her book, together with the study by Miss Welsh, adds considerably to the small amount of pertinent information available. Winifred J. Masson has compiled a list of government documents from widely scattered sources which would be useful in high school home economics courses, and has given illustrations of possible uses of certain of the publications by both teacher and pupil. The two bibliographies on family relationships may be valuable in home economics courses, guidance, and social studies. The treatments of audio-visual aids are largely survey in type, and deal very little with the educational implications in the use of such materials. On this subject, although the number of investigations at the library schools has increased, the best research continues to be done by outside agencies.

In the present period of stress, it is to be expected that the problem of censorship should be taken up. However, as far as could be discovered, Mary L. Eakin's study of 1948 is the only one specifically dealing on this matter with high school library books. In answers to a questionnaire from 120 librarians in all parts of the country, it was reported that some degree of censorship exists in the purchase and use of materials in secondary school libraries, and that the pressures for it come from persons within and individuals and groups outside the school. Most of the concern was with the effects of certain books on adolescent attitudes, yet there was little agreement as to exactly what books or what aspects of them constituted danger to attitudes and to morals. As the result of her study, Miss Eakin recommended policies to be adopted as a guide in selecting books for adolescents.

The area of materials remains a fruitful one for investigation. As larger units of school library service are brought into being, the question as to the need for a selection policy should be investigated. Would the principles adopted by the Enoch Pratt Free Library be equally applicable to a school situation? One of the great needs is an evaluation of standard book selection tools in the light of curriculum and student needs. Analyses of the use of a selected list of magazines by students in a variety of school situations would provide data for further evaluation of school magazine purchases. As audio-visual centers acquire rental libraries of filmstrips, the relative feasibility of purchase or rental needs to be considered. The question of which audio-
visual aids are most effective in library instruction, and under what circumstances, should be investigated.

These previously mentioned studies of magazines and newspapers as mass media were made from the point of view of materials rather than that of their effects on the reader. From the point of view of library research, interest in the comics seems to be on the wane. Both studies done during the period of this review consist largely of summaries of previous investigations on this topic. In the main, research in the field of communications has been done by agencies outside the library. Studies of content, retention, and the relation of frequency to learning, are the principal types of research at the present time, and are probably the ones of greatest significance to the school librarian. Some of the follow-up reports on earlier television investigations show that the long-range effects on reading are not as bad as early investigations indicated. Although an immediate fall in reading following acquisition of a television set is reported, there is a return to a normal reading pattern after the period of novelty has passed. Some children and adults even reported being stimulated to read by television. In a study of children’s reactions to radio adaptations of books, Mae O’Brien found that ten-year-olds were quite capable of rating such programs, that their criticisms of scripts and productions were valid, and that the characteristics of radio programs which affected children’s reactions applied equally well to television and recorded programs.

In order to more fully understand what is going on in the field of communication, it is important that the school librarian should at least try to keep abreast of developments. In many instances the results of research are of more importance than the research itself.

The pattern of interest in school library personnel and training for school library work has definitely been a product of the times. In the late 1920’s there were some studies touching it. Then came the depression, with the over-supply of school librarians and the unfortunately prevalent attitude that school librarians were not essential. Personnel and training were passed over in choosing thesis topics. When the discrepancies between demand and supply began to be apparent in the market, these topics began to reappear, and they formed an important part of the research undertaken.

In her study of the status of secondary school librarians in cities of 20,000 to 250,000 in New York and New Jersey, Dorothy Annable sent questionnaires to supervisors, principals, and librarians to ascertain the relative positions of teachers and librarians as to qualifications, salaries, hours, prerogatives, and faculty status; and of librarians, de-
partment heads, and supervisors. She also obtained reactions as to the desirability of department head status for librarians. Since New York City continues to classify school librarians as clerical staff, such a study is particularly pertinent to that section. Another facet of the history of school library service in Arkansas \(^{15, 16}\) is Ruth I. Dunaway's examination \(^{46}\) of the progress made toward meeting the 1952-53 standards for training school librarians of the North Central Association of Colleges and Secondary Schools by college and state agencies. The purposes of a study by Ruth B. Galbraith \(^{47}\) were to learn what school library functions administrators feel make the greatest contributions to the school program, and to determine whether library school curricula provide for instruction in these functions. Her findings raise several questions as to the adequacy of preparation for essential school library work by library schools.

The American Library Association has recently issued two new statements of standards \(^{48, 49}\) which are discussed elsewhere in the January, 1953, issue of *Library Trends*. Ruth M. Ersted, \(^{50}\) who worked with the Board of Education for Librarianship on standards for teacher education institutions in library science programs, developed concurrently her thesis *The Education of School Librarians*, in which she tested certain hypotheses concerning adequate educational programs for school librarians, and arrived at a proposed basic program.

Interest in standards has recurred at almost regular intervals since the beginning of systematic research in the school library field. With the recent humanizing of standards it has been rising. Caroline M. Piscitello \(^{51}\) traced the development of standards from 1918 to 1949, and their change in emphasis from goods to services. Where early criteria seemed to exist for their own sake, the new ones have been developed primarily for measuring purposes. *Evaluative Criteria*, \(^{52}\) which appeared in 1939, probably has been an influential factor in this interest. Another thought-provoking instrument is *A Planning Guide for the High School Library Program*, \(^{53}\) with its emphasis on school objectives, aspects of service in terms of them, and long-range planning. The Local Area Consensus Studies, \(^{54}\) sponsored by the Illinois Secondary School Curriculum Program, represent an effort to get school and community agreement on the school's problems and programs. Of special interest to librarians are Inventory A, *What Do You Think About Our School Library Program?* \(^{55}\) and Inventory B, *In What Respects Should We Strengthen Our School Library Program?* \(^{56}\) Like the other inventories in the Area Consensus Studies, these are to be checked by pupils, parents, laymen, and faculty members to deter-

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determine the present and future role of the school library in the school and community. The data on this section of the study are being gathered and will be interpreted by Alice Lohrer as part of her Ph.D. dissertation at the Graduate Library School of the University of Chicago. Such evaluation is a forward step, inasmuch as it brings the public, upon whom final support of the school system rests, into an active role.

The American Association of School Librarians have underway a national study of school library standards. This project, which is being carried on in cooperation with other national educational and library organizations, should provide school librarians and educational officers with a body of data for further studies in the field.

Evaluative studies of school libraries in demonstration schools which train teachers are needed, particularly as they supposedly are factors in developing library consciousness among future teachers. Investigations should be made of the effects of evaluation on school library programs. Further investigations of the type of Miss Lohrer’s are needed, not only to get at the value of school libraries, but to acquaint the public with the purposes and services of such agencies.

As has been made obvious, the needs for research in the school library field are great. Some of the larger problems lend themselves to the kind of investigation undertaken at the Ph.D. level. However, a vast body of smaller projects need exploration. Whether or not this sort of investigation will almost disappear is dependent to a large extent upon the five-year programs of library science in teacher education institutions under the new A.L.A. Standards.49

Whatever the source of research, one need is paramount, i.e., improved communication of the results of research. Closer cooperation with Library Literature in supplying entries and informative summaries would be an important step in this direction. Where theses or dissertations are available neither on interlibrary loan nor microfilm, a gap in the availability of research results would be closed if two-page abstracts of their contents and conclusions could be duplicated and made available to those interested, at a small sum. Such improvements in the accessibility of findings would do much to avoid duplication of effort, and would provide a much more thorough picture of the amount and kind of investigation, whatever the phase of study. Equally important is the need for spreading the news about research results. The outcomes of studies like that of James 25 are as important to administrators as to librarians. Again, administrators and teachers as well as practicing librarians would be interested in the publicity

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activities listed in the Geiger study. The direct and implied criticisms of preparation for school librarianship in the findings of the Misses Mahar, Geiger, Krentzman, Maddox, Galbraith and Ersted should be considered by library schools in planning curriculum revision. When the results of research in the school library field are more effectively communicated, such research will assume the roles for which it was intended, i.e., those of adding to knowledge and helping in the revision of accepted conclusions.

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Methodology in Research and Applications

LEON CARNOVSKY

There is no method of research that is unique to the study of librarianship. At best there are only applications to library problems of methods and techniques that have been found useful in other disciplines. Fact-finding, case studies, determination of cause-and-effect relationships, statistical manipulations—all these have long been established procedures, and their contributions and limitations are as applicable in the sphere of the library as they are elsewhere. Historical investigations of the library, too, must obey the rules of evidence which are observed in the study of any other institution or of societies and states.

Probably any piece of investigation can be formalized in the following terms:

1. Statement of the problem: what basic questions are to be answered?
2. What data are necessary to answer them?
3. What procedures are most likely to elicit the data?

Such questions, especially the first, call for clarification, for definition of terms which make possible the collection of evidence with a bearing on them. Let us assume an investigation into the state of reading of a given group of people. The crucial word is "reading:" for the purposes of this study how shall we define it? Shall we limit it to book reading—and if so, shall it be number of books (wholly or partially read); shall we be concerned with kind of book (problem of classification); and shall we limit it to library reading? Merely to state questions of this kind may result in a revision of the concept of the study, and it will certainly affect the nature of the data to be assembled. There are, of course, numerous other problems to be faced; to mention only one, the problem of sampling. Suppose the "given group of people" is defined as college students. Is the reading (how-

The author is Professor of Library Science, Graduate Library School, University of Chicago.
ever defined) of, say, 300 such students to be regarded as typical of the entire student body—to say nothing of student bodies in other institutions? Are we interested in arriving at an answer that may be generally applied, or that may be accurate only for the small sample included in the immediate study? Significant as these considerations are in relation to the relatively simple problem here suggested, they become infinitely more complex as the problem goes beyond mere fact-finding to the determination of causal relationships; for example, what is the effect of television on reading? Here we have all the questions already suggested plus a lot more on television (e.g., amount of time spent viewing it, kinds of programs seen) plus the crucial question of relating one to the other causally or at least statistically.

The nature of any inquiry will of course determine the methods and techniques employed. We may be interested in opinion, in what a group of people think, and what they tell us—granted accurate reporting—may be taken as evidence. The information constitutes the facts about their ideas and impressions. It may not necessarily be trustworthy for other purposes. For example, a group of persons might think that close classification is superior to broad classification and they may even be able to justify their belief by a logically reasoned argument. If what we are interested in is what they think about this aspect of classification, there is no better way of learning it than by getting the information direct from them. If, however, we wish to know whether close classification is actually superior, we shall have to go beyond opinion and raise the question of definition once more: What do we mean by “superior”? Easier location of books (and by whom)? Less costly? Speedier service? Answers to these questions might require elaborate studies of cost, time involved in locating books, and other factors. We may very well find that for some libraries a more costly arrangement is more than balanced by ease of use. For others it may be that their patrons are completely indifferent to classification, particularly if they are denied admission to the stacks. It may even be found that for some libraries, where the catalog serves solely as a means of determining whether or not the book is owned and where it may be located, the fixed location principle is still altogether satisfactory from the standpoint of providing the patron with the book he wants—and is economical in use of personnel and efficient in shelving. Whatever the conclusions, they should be derived from the relevant facts in the case, and these facts must be ascertained in the light of the problem presented.

Library investigations may be of many kinds. In order of complexity
they may range from simple description of a process to a generalization or even to a law showing the invariable relationship between a cause and its effect. Between these extremes there are studies which depend upon the whole panoply of techniques and procedures employed in any field. These include observation and description, interview, questionnaire, statistical data from primary or secondary sources, checklists, rating scales, and documentary analysis. (Applications of most or all of these devices are readily apparent in the substantive reports of research recorded throughout this volume.)

Though a principal aim of research is to arrive at generalization, it frequently becomes necessary to base a conclusion upon limited evidence; that is, upon sampling. At this point the crucial question is one of knowing to what extent the conclusions derived from such limited evidence may be applied to a universe. It is in this sense that the word "reliability" is used. Data, or a sample, which truly represent a larger, untapped whole are reliable; the conclusions revealed by the data in hand are true not only with respect to those data but to the larger body from which the sample has been drawn. This simple principle is the basis for opinion polling; and it has been employed in most aspects of the Public Library Inquiry.

Even before the reliability of evidence is established, however, it is essential that data satisfy the criterion of validity. Simply stated, this means that the data tell us what we assume they tell us. An obvious illustration may be drawn from the field of library reading: Are book withdrawals equivalent to book reading? We may logically assume that books withdrawn from a library are meant to be read and in most cases are read. Therefore we are correct in basing a study of library reading upon a study of the circulation record. But suppose we want to know more than this; suppose we want to relate books to the specific reader; can the borrower be identified with the reader? Since we know from experience that many borrowers take books for others to read, it would be hazardous to assume that the borrower and the reader were synonymous, and the simple data of book borrowing would not bear on the problem. Or to refer to the illustration suggested above, if we want to know whether close classification actually is superior to broad, opinions as such would not constitute valid evidence. This type of error is not corrected by gathering more evidence of the same kind, that is, more opinion. It it not a question of too small a sample but rather a poor one, qualitatively, since it does not bear on the question at issue. The following comment is relevant:

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It frequently happens that the worker loses sight of the fact that his data are inadequate as to quantity and quality and applies elaborate statistical methods with the expectation that the final results will be of value. Such procedure, if followed intentionally, has been rightly described as "hiding behind a statistical smoke-screen," and is nothing less than a scientific crime. The limitations of the data employed should always be frankly recognized and the conclusions of the study made with them in mind. No amount of subsequent juggling by complicated formulas can give good results when they are based upon originally faulty data.¹

Since so much investigation in librarianship depends upon information obtained from individuals, either librarians or readers, it is natural that the interview and questionnaire have been widely employed. Both have been criticized, on the grounds that the results are untrustworthy, or that the information sought may be obtained elsewhere and more accurately. Needless to say, such criticism is frequently justified; if data of whatever kind are readily available, particularly in published sources, they should be used; where they are not, the personal approach may be inevitable. But can there be any assurance of accurate responses? In some cases and for some kinds of inquiry the possibility of error is certainly present and should be frankly recognized. The error may be of two kinds: one, deliberate misrepresentation, the other, an honest estimate that does not conform to the facts. Illustrative of the latter is the question: “How many books are in your home library?” The question “How many books have you read in the last x weeks or months?” is frequently difficult to answer accurately, especially if the period for which information is asked is a long one, and if the respondent is a heavy reader. The difficulty is compounded if the question calls for titles of books read in the given period, and the answer, at best, is likely to be incomplete.

It is easy to pick flaws in the interview and questionnaire technique, yet a gigantic investigation based upon it is conducted decennially—the census. Many of its details are faulty and incomplete, yet with all its imperfections the results are invaluable. It is impossible to visualize the compilation of such tools as the various “Who’s Who” volumes without the questionnaire. As an instrument for eliciting information the questionnaire is useful to the extent, first, that its questions are clear and unambiguous, so that the subject understands precisely what is asked and the investigator can correctly record the answer; and second, that the questions permit accurate answers and not wild or random guesses. Questionnaires may also be useful for
obtaining opinions or judgments; the results will be useful if the
opinion is informed. As someone has said, "A consensus of worthless
opinion can be no more than a worthless consensus." But even in-
formed opinion is a far cry from evidence—except as to opinion.

Applications of the questionnaire in library investigation are too
plentiful to enumerate. The American Library Association "Survey of
Libraries in the U.S." was based almost entirely on an elaborate sched-
ule, and the survey of libraries conducted by the Library Association
in Great Britain used a questionnaire as the basis for studying library
government and operations in many parts of the world. Though these
schedules may be helpful in suggesting types of questions, in the last
analysis the individual investigator must develop his own question-
naire in accordance with the requirements of his own problem.

Studies of reading have frequently employed the questionnaire.
W. C. Haygood in his study of the New York Public Library readers
distributed a form to a large sample of library visitors, and he used
their testimony as the basis for his discussion of reading preferences
and sources used for acquiring books. Many other studies, cited in
B. R. Berelson's *The Library's Public,* have used a similar technique,
though most of them cast a wider net to obtain results. (That is to
say, they were not limited to library patrons, since they were aimed at
discovering facts about the reader in general rather than the library
readers only, as in Haygood's study.)

Another method is that of analyzing library circulation records.
This, of course, is regularly done by libraries to break down circulation
into adult and children's books and also into the various subject
classes. But circulation records may also be used to ascertain the bor-
rrowers of specific books and types of books. In C. H. Compton's
studies the record was used as the basis of a letter to the borrower
and thus the problem of identifying the borrower with the reader was
avoided. The advantages in this method over the questionnaire are
obvious; nevertheless it has its limitations. For library reading is only
part of the pattern of general reading, and the circulation record tells
nothing at all about the reading of the great mass who never come
into the library; for that matter, it tells nothing about the reading of
the library patron beyond the materials borrowed from the library.
There is no single technique that will satisfy all types of reading study;
each must be developed in accordance with the basic problem under
investigation. Thus one might study sales records for establishing book
popularity; or the distribution of book club memberships; or the rela-
tive popularity of certain magazines in different parts of the country

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based on subscriptions or newsstand sales. The problem determines
the most feasible and appropriate method.

A variant form of the questionnaire is the checklist, designed to
simplify the work of the respondent and also to facilitate the compila-
tion of the replies. If one wished to know something about the extent
of the reading of best-sellers by a given group, it would be fairly easy
to compile the list of books and ask for a simple check to indicate
titles read. The checklist has been used as a key to reading interests
and very widely in studying library resources. The uses and limita-
tions of lists for the latter purpose have been described in the April
1953 issue of Library Trends.

It is frequently necessary in non-quantitative studies to rely on the
judgment either of presumed experts or of persons in a position to
make decisions on the basis of personal knowledge. Suppose, for ex-
ample, that one wished to construct a list of titles in, say, money and
banking or Victorian literature that were highly important in their
areas of knowledge. Determination of criteria of importance may be all
but impossible for the person without more than a superficial acquaint-
ance with the field. He may therefore look to the subject authorities,
and he may base his choice of titles to be incorporated on the list on
book reviews or on the judgment of authorities. The familiar C. B.
Shaw List of Books for College Libraries was compiled at least
partially in this way, and other examples of such compilations are
numerous. Eugene Hilton's Junior College Book List gives a sys-
tematic description of the application of this method. Another ex-
ample is the compilation of lists in social science used by Douglas
Waples and H. D. Lasswell in their National Libraries and Foreign
Scholarship. Personal judgment may also be depended upon in rat-
ing individual performance on the job. Observation and job descrip-
tion may indicate what the work consists of and often the judgment
of one in a position to know may be crucial in determining how effi-
ciently the work is done.

The interview is quite similar to the questionnaire, and is frequently
carried on against the background of such an instrument. Whereas the
questionnaire is usually employed to gather information by correspon-
dence, or from a large assembled group, the interview proceeds in
an oral, face-to-face conversation. Although the two procedures have
much in common, there is at least one important difference methodo-
logically. For the interview, though based on a given set of questions,
provides scope for exploring matters that may be mentioned by the
respondent, and thus there is opportunity for clarifying, illuminating,
and interpreting certain statements which in a frozen, written form may be vague, ambiguous, or downright inaccurate. Indeed, for some types of investigation the interview is all but indispensable. It would be difficult, for example, to know how the scholar uses the library, how he proceeds from one source to another, and what frustrations and difficulties he encounters, without extended conference. Studies in many aspects of reading and of the administrative process have made excellent use of the interview technique.

Perhaps the simplest approach in any investigation is that of observation—the description of what one sees. Yet observation as a research procedure is never an end in itself. It is undertaken either as the basis for an hypothesis (a guess as to why a situation is as it is) which may then be subjected to further study, or to evaluate a given practice against some criterion or standard or norm. How does the practice compare with what it should be? This approach is particularly helpful in such non-quantitative areas as administration, where a library’s procedures and organizational structure may be evaluated in terms of general principles of administration which have been developed in other areas of government or in business and industry.

Another approach to description is through the recording of what goes on by the participants themselves. This is a form of diary, and has been widely used in the job analysis studies that have preceded the construction of classification and pay schedules. Such description may also be used for work simplification or more efficient organization. Again, as with observation, it is plain that description itself is only the first step, and becomes useful only as it is made the basis for further work. Here enters the difficult problem of identifying equivalent tasks, classifying them, and arranging them in a hierarchy of difficulty and complexity.

Experimentation in the scientific sense is difficult in all the social sciences, and no less so in library research. The laboratory approach in its conventional form, with experimental and control groups, does not readily lend itself to the investigation of library problems; however, it may be applied in a before-and-after situation, where all conditions remain constant except one, and also in a comparative situation where all conditions except one are held constant in two communities or libraries. (In point of fact, the two are basically the same, since comparison of results or effects is implicit in both. This is also true of laboratory research in the natural sciences.) Illustrative of the first is the study of the effect of the divided catalog at the University of California. Here the criterion applied was the opinion of a sample
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of the users—faculty and students—on the assumption that they had had an opportunity to use both the dictionary catalog (before) and the divided catalog (after) and could express their reactions to the two. Another illustration is the study of the effect of tilted or sloping shelves on book circulation. Representative of the second, or comparative, approach is the study by J. E. Wert, comparing the effectiveness of the independently housed and the school-housed library branch. Wert realized that the "superiority" of the former had long been taken for granted; that school-housed branches were almost invariably deficient in many respects, but he questioned whether this was inevitable in the fact of school housing. If he could show that it was not inferior in acceptability to its adult community, and if he could further assume that the school-housed branch offered certain advantages in economy of operation and in greater convenience to children, would this not be a strong argument in favor of the much-maligned school branch?

Even though Wert's study did not encompass all these factors, it is interesting for its application of method. The problem was to select two communities alike in all major respects, such as education, economic status, general sophistication as shown in magazine reading, and other areas. Each community was served by a library branch, also alike in all respects except the nature of housing. Wert suggested the assumption that if housing made a difference it would be reflected in the community reading pattern and in size of registration. To check the effect on reading, he computed the proportion of all book reading reported in a two-week period that came from a library (i.e., did a community select a larger share of its total book reading from one type of branch or another?) To check registration, he simply computed for each community the proportion of persons (differentiated by age and sex) holding library cards. He found that the school-housed branch proved superior on both counts, even though the differences were not great, and he therefore concluded that a strong case could be, in fact, had been, made for the school-housed branch.

Documentary analysis consists of a study of printed sources or documents to determine the frequency with which certain elements appear. Such elements may be ideas, or words, or symbols; or they may be such matters of form as editorials or footnotes or advertisements. Once more the nature of the inquiry determines the items sought. An early example of the application of the technique is seen in Recent Social Trends, where reading interests at different periods were charted on the basis of a count of the frequency with which certain topics were
treated in the periodical press. (The usual problem of sampling is here encountered.) Waples identifies three types of analysis in this area, seeking

(1) to determine the relative emphasis or importance of the subjects treated in the given publications when classed by date, place, authorship, or other appropriate categories; and sometimes to discover and interrelate the motives or attitudes expressed (sometimes unconsciously) by the symbols employed by writers on a given class of subjects; (2) to determine changes or differences in the styles of selected authors or publications; and (3) to analyze verbal elements for measures of relative difficulty, richness of vocabulary, precision of meanings, and other qualitative differences among publications and their authors.¹⁷

Among the studies in this area are those based on footnote citations: the attempt to arrive at the relative importance of different types of publication (books and periodicals), of differences in age, and of differences in language. The studies of H. H. Fussler, C. W. Hintz, Arthur McAnally and numerous others all throw light on these relationships. Additional examples of subject, symbol, stylistic, and verbal analysis are cited by Waples,¹⁸ and are regularly reported in Public Opinion Quarterly.

The case-study method pertains to the study of an individual, an institution, a community, or a single group within the community; it may be applied to a library or to a part of it. Yet in science the individual, or particular, is of importance only as it leads to hypotheses of more general application. The biologist studies the frog primarily to determine general characteristics of frogs and, by extension, of physiological structure and process. The physician diagnosing a patient's ills is engaged in case study; such a study is a necessary preliminary to prescription—and the prescription itself is based upon a whole background of medical science. In the same way a library may be studied as a "case" in order to describe its operations; if changes are prescribed or recommended, these flow from judgment based on knowledge of librarianship in general, or of principles found to be applicable and effective in other libraries. The case study itself, however, does not require suggestions for change.

But even mere description implies a selection of the characteristics to be described. How, for example, shall we describe the personnel of a given library? The answer can be given only in the light of what one wants to know. It is altogether feasible to describe physical characteristics; this is not done because the resulting data are not likely to bear on a significant problem. On the other hand, it is quite com-
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mon to describe personnel in terms of their formal education—on the assumption that competence on the job bears a relationship to the educational factor. This assumption itself may be subject to study; one might readily raise the question of this relationship not only in general terms but also in a more restricted (and precise) form; e.g., what kind of education makes for competence in a particular kind of job? Short of stating or implying questions of this kind, description becomes purely fortuitous and can do little more than satisfy curiosity. In relation to Karl Pearson's statement: "The man who classifies facts of any kind whatever, who sees their mutual relations and describes their sequences, is applying the scientific method . . .," E. W. Burgess comments: "There is certainly nothing in this definition to exclude the case-study method from scientific procedure, provided that it involves classification, perception of relationships, and description of sequences."

19 Virtually every investigation in librarianship to some extent uses the case-study method. Whether the method itself results in scientific conclusions depends on what is done with it. If it stops merely with description of a given case, it is description and nothing more; if, however, the description is made the basis for comparison and especially for studying interdependence, the method may be highly significant in arriving at causal relationships and ultimately at basic principles or laws.

Another method long practiced in librarianship is the historical. Library history may be of several kinds. It may consist of the reconstruction of a single institution, tracing its origins and development in time; or it may regard "librarianship" as applied to the general institution, showing how it was brought into being, how it spread, and how it flourished. In either case the history may be a reconstruction of institutional events, or it may relate the institution to the broader social and cultural forces responsible for its creation and evolution. Whatever form it takes, its basic materials are documents. Yet the documents themselves are subject to all sorts of interpretations, touching on their authenticity, limitations, bias, accuracy, and all-round trustworthiness. As Allen Johnson has written: "It is only by resolutely questioning the authenticity and value of sources that a mastery of historical facts can be won. In no field of scholarship does the dead hand of tradition weigh more heavily, for human emotions and passions are often involved in the preservation of this or that interpretation of history." 20

The historical method, as J. H. Shera reminds us, is simply "a system of reasoning whereby the historian proceeds from the inspection
and study of records (or evidence) to an understanding of facts or relationships relevant to the period or problem he is investigating.\textsuperscript{21} It may be worth observing that history depends on the existence of such documents; someone recently observed that there must have been numerous wars fought among the ancient Greeks, but only through such accounts as Thucydides' \textit{History of the Peloponnesian War} are we able to know about them. Many battles lacked their chroniclers, and have been lost to history.

The documents that the historian, including the library historian, uses are of many kinds. Shera lists, as primary sources, artifacts, inscriptions, official public records, official private records, newspapers, and personal sources such as diaries, letters, memoirs, and others. His account of his own investigation is illuminating, showing not only the sources used but the relevance of such materials to his central problem.

The library historian's job essentially is one of immersing himself in the source materials related to his problem, evaluating such materials for relevance and dependability, and establishing relationships. His is the job of reconstructing what actually happened, whether it be library establishment or reading trends.

The survey, either of a single library or of a group of the same general type, is thoroughly familiar and has been especially popular in student investigations. Such surveys employ numerous techniques; they may aim simply at clarifying a situation at a given point in time or they may go beyond to postulate reasons for conditions being as they are, or they may suggest how in future conditions might be changed. The statement of a program for the future, or a series of recommendations or proposals, may result from investigation, but is more likely to be related to a philosophical concept—an idea of how things \textit{ought} to be. L. R. Wilson's \textit{Geography of Reading},\textsuperscript{22} for example, examines the state of librarianship nationally, relates this to contemporary social and economic conditions, and concludes with a series of proposals designed to bring about changes in the existing pattern.

Though the approaches to investigation have been considered more or less distinct from one another, many of them are utilized in any large-scale study. The historical approach in particular is frequently employed if only to provide a setting for an analysis of contemporary conditions; the present can be understood only as it is revealed as the culmination of a historical process. Two of the most comprehensive studies of recent years—C. B. Joeckel's \textit{Government of the American Public Library}\textsuperscript{23} and the Public Library Inquiry—devote some attention to historical background, and numerous surveys of individual
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libraries begin with a historical perspective. Joeckel employed legal research as a basis for understanding library structure; documentary analysis to ascertain something of the powers of library boards; and questionnaires and interviews to learn how libraries fare under different modes of governmental regulation. The several elements are logically interwoven, and serve as the basis for certain recommendations concerning a more satisfactory organization of library government than now prevails. The Public Library Inquiry is characterized by its director as falling "into the category of social engineering or applied rather than pure social science research." And later: "Its task was to organize existing data and to develop relevant new data on libraries, to bring to bear on the library as an institution generalizations derived from the analysis of other social institutions, of social forces and trends, and to evaluate the data for the use of those who play an active role in public library planning." 24 Since total coverage of all public libraries in the United States was not feasible, and indeed unnecessary, the sampling technique was employed, the sample of sixty libraries being selected to represent institutions of different size and communities of different composition. Beyond this sampling of institutions, the Inquiry sampled the population to learn something of reading habits and library use. The whole study was projected in terms of nineteen distinctive projects, and virtually all the techniques described in this chapter were employed in one or another of them. The major findings, and particularly their implications for the major task of the study—the charting of a logical future for the library in terms of structure and function—are brought together in the synthesizing volume, The Public Library in the United States.

There is obviously no one method of library investigation; indeed, it would be more pertinent to observe that no method utilized in scientific investigation is foreign to research in librarianship. Only as the particular investigation is clearly formulated is it possible to determine what methods are most directly applicable to it. The first responsibility of any investigator, therefore, is to define clearly his aims and objectives, and in the light of such definition to proceed to the collection and analysis of the relevant data. In this process he will employ numerous methods, and his success will depend upon his imagination and skill in using them.

References

18. Ibid., pp. 36-39.

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Science editor of the London News Chronicle and former chairman of the British Association of Science Writers, Ritchie Calder, tells an amusing story about a friend of his who became involved in "operational research" during the war. In 1941 Calder went to see his friend Dr. Cecil Gordon, a geneticist. He was working in his basement laboratory at Aberdeen University. He was very excited. He was counting the hairs on the antennae of the banana fly and had just found an extra whisker on the offspring of a fly which had been fed on Vitamin B.

The next time Calder heard of Gordon he had doubled the capacity of the Coastal Command—without adding a man to the personnel or a plane to the Command! What he had done was to apply his scientific training and experience to the problem of getting more planes into the air when there weren't any more planes to be had or men to fly them. He studied the organization of the Command and found that its capacity could be doubled—not by adding more planes and men but by re-organizing the Command so that the planes it had would be in the air longer and oftener. He did this by improving the methods for servicing the planes.

As Calder pointed out, doubling the capacity of the Coastal Command is a far cry from counting the whiskers on a banana fly. But the training and experience gained in the one made the other possible. This is only one example of how the scientist, who has been thoroughly trained in research methods and procedures, can help solve problems outside his laboratory. Operational research has now become an important part of industry, management, and labor and as the several papers in this issue so abundantly point out, of librarianship as well.

While many of the library schools are beginning to organize systematic research, and there is at least one proposal, as described in Mr. Dane is Assistant Professor, School of Library Science, University of Southern California.
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the Editor's Preface, for a cooperative approach by several schools, further steps need to be taken, and soon.

Therefore, it is proposed that further efforts in fostering and encouraging library research be made by strengthening and enlarging the Committee on Research of the Association of American Library Schools. The A.A.L.S. has under recent leadership strengthened its financial position, clarified its objectives, and is now ready to move into an active program. However, the affiliation of such a Committee or Round Table is not the important thing. If the A.A.L.S. is unable to develop it, the committee could be a part of any library organization or association interested in promoting library research. The important thing, at least in the minds of those who have proposed this scheme, is that a Research and Development group be formed as soon as possible.

What should such a committee try to do? There are a great many things it could attempt. However, it should not try to do too much, especially in the beginning. Part of the modesty of this proposal lies in the fact that the Committee would not try to do everything at once. It would not attempt to do the impossible over night. That is a mistake which other schemes for encouraging library research have made and which this plan must avoid at all costs.

In the beginning the Round Table, which this author prefers to call it, might well content itself with reporting progress on projects already under way. This would be a modest beginning and there is a need for this type of reporting. Good research cannot be carried out in a vacuum. It needs to be criticized and evaluated from many points of view and particularly while it is being carried on, rather than only after completion. Too often little or nothing is known about a research project until after it has been completed. The profession at large usually does not know about a project until the results of it have been published in some journal. Then it is too late. For by that time the mistakes and oversights have been made which could have been prevented by constructive criticism while the work was still in progress. Then it is too late to go back and collect additional information or to broaden or narrow the base of the investigation so that it would be more meaningful and helpful to the profession at large.

The old adage about two heads being better than one is as true in research as in anything else. Teamwork is a vital part of good research. If a Research and Development Round Table started out by reporting on the library research which was being done at the time it would

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do a great deal to improve that research and to foster additional re-
search. In reporting on projects under way attention could be called
to difficulties which had been met and not yet solved. Making these
difficulties known to all interested librarians would be one way of
asking for help in solving them. Other librarians might have en-
countered similar problems in a different situation and have worked
out solutions which could be applied to the project under discussion.
By discussing and describing the way they licked the problem they
might be able to save another investigator the trouble of having to
go through the process all over again. Or out of their experience they
might be able to suggest a solution which would never have occurred
to him. They could give valuable aid to the librarian who has lived
too long and too close to his problem.

Reporting current research at a Round Table twice a year, once
during the American Library Association Midwinter Meeting and once
during the Annual Conference for example, would not in itself be
enough to arouse interest in that or other research. Something more
would be needed to reach a wider audience than could attend the
regular meetings of the Round Table. If the scheme stopped there it
would more than likely meet the fate of similar schemes. It would end
up in talk instead of action. What would be needed would be some
means for getting the Round Table's reports on research in progress
to all those interested in such research. For if enough people know
about a problem and talk about it the talk is more apt to result in
some kind of action.

It has been suggested that the proposed Research and Development
Round Table might start out by issuing a newsletter which would
summarize the reports made during its meetings. This would be one
way of letting more people know about what is going on in library
research. It is hoped that such a newsletter would not only acquaint
many librarians with research in progress but that it would stimulate
further research as well. Through a newsletter the Round Table could
attempt to create a more favorable climate of opinion for investigating
library problems. In the past lack of interest in library research has
often been one of the reasons why there has not been more of it. By
publicizing research the Round Table's newsletter should do some-
thing to help overcome this obstacle.

If the Round Table's newsletter proved a success it could pave the
way for something more elaborate and consequential. After proving
the value of reporting on research projects under way it could experi-
ment with something more pretentious. This might take the form of
an annual volume of proceedings or of a serial publication which would attempt to summarize and comment on the projects which were completed during the year. However, since this is a modest proposal dreams of the future should be pushed aside until the newsletter had definitely shown that there was a real need for a more formal means of communication. An elaborate publishing program should not be the concern of the Round Table in the beginning.

Librarians have often been criticized for referring to "research" when, according to the true scientists hidden away in their chrome and tile laboratories, what they really mean is a kind of amateur snoop- ing. Like counting the number of books circulated and finding out whether the patron actually read them or not. It must be admitted that some of what passes for "library research" is not research at all. The sort of Round Table envisaged here might do something about this. It has been suggested, for example, that scientists from other fields should be invited to the meetings of the Round Table. They would listen to the reports on various projects and would take part in the discussion which followed.

It is hoped that these scientists from other fields would be able to point out the strong and weak points of the research being undertaken. Out of their broader experience in research techniques and methodology they should be able to give valuable and constructive criticism. They would be able to furnish the objective and outside point of view which is so often crucial in the progress of any research project.

Although this would not be exactly what Calder meant by operational research it would be very close to it. The geneticist who has learned the importance of noting and counting the whiskers on a banana fly should be able to help the librarian who needs to observe and count the number of people who use the imprint information on a catalog card. He has learned what to ignore and what to pay attention to and this knowledge might be of great value when shared with the librarian. Documentation supplies us with another example of how the librarian can benefit from the knowledge and techniques of the scientist, in this case the mathematician and communications expert.

Besides issuing a newsletter to inform all interested librarians of what research in library problems was going on and besides inviting scientists from other fields to evaluate and comment on research in progress, there is one more service which a Research and Development Round Table might provide. It could attempt to coordinate the research which was being done in library science. At first this
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might be only a by-product of the reporting function of the Round Table—but it would be a very important by-product.

By acting as a kind of clearinghouse for library research the Round Table would be in an excellent position to help coordinate that research. In library research especially there is always the danger of duplicating work which has already been done elsewhere. This is partly because library research is usually not reported in the various professional journals until it is nearly complete or because it is not reported at all. Partly it goes back to the fact that most library research now has to be done by librarians who have a regular job and can devote only their spare time to research. As a result they are forced to work alone. It is to be hoped that the Round Table’s newsletter, along with the reports made at its annual or semi-annual meetings, would do something to correct this.

However, there is a real need for something which would do more than just prevent the duplication of research effort. There is also a need for some group or body which would attempt to coordinate library research insofar as that may be possible. The Round Table should be the best informed group as to what research was being done or planned or contemplated. Part of its reason for being would be to collect and make known information about such research. Consequently before a librarian started a research project he would first clear with the Round Table to find out if anyone else was working or planned to work on a similar project. If he learned that a librarian in Chicago or Los Angeles was already doing the same thing he would be able to spend his time on something else and so avoid duplicating the work being done elsewhere.

This does not mean that a librarian would have to give up his pet project simply because someone else had registered a similar one with the Round Table. If he wanted to go ahead with the project anyway there would be nothing to stop him. The Round Table would not and could not do anything to prevent him from doing what he wanted to do. But at least he would know that someone somewhere was doing the same thing.

If he learned through the Round Table that a librarian in Boston or New York was doing a related piece of research he would be able to get in touch with him and exchange ideas. The two librarians might then discover that they were working on two different aspects of a larger problem. This knowledge would enable them to coordinate or correlate their individual projects, if they wanted to, so that both would form a united attack on the main problem.
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This would be one way of coordinating library research. Through its newsletter and its reports the Round Table would provide the means for integrating library research but it would not necessarily take an active part in the process. That would call for a more aggressive program. If the Round Table wanted to work directly toward coordinating research it would have to do more than simply issue a newsletter periodically. For the coordination which would come from that alone would be largely accidental. In addition it would have to work out a plan which would aim at covering problems which needed a solution but which, for one reason or another, were not being worked on.

In the beginning this plan would not have to be elaborate. If all librarians engaged in research would report on the work they were doing to the Round Table it would be in a position to know what was being done as well as what was not being done. It could then take steps to see that the areas which were not being covered would be. In some cases it might do this by providing a small sum for initiating research in an uncovered area. The Round Table could set aside part of the money received in dues for this purpose. Or it could attempt to secure small grants which would be used for the sole purpose of encouraging library research. In other cases it might achieve the same result by compiling a list of projects which needed to be undertaken. By publicizing such a list it could call attention to needed research.

Librarians interested in research and looking for suitable projects would know where to turn for suggestions and would be aware of what needed to be done first. In this modest way a beginning could be made toward coordinating library research into a comprehensive program. Eventually such an over-all program would have a great influence on the study of library problems. The growth of our knowledge about library science would be steady and progressive. No longer would library research be like the knight who mounted his horse and rode off in all directions at once. It would be a unified rather than a haphazard assault on the problems which too often now interfere with our progress.

The Round Table would always do everything it could to encourage library research but it would never try to control or regulate it. It must not be thought that the coordination recommended here would in any way be restrictive. Coordination would have to come voluntarily or it would be worthless. However, it is hoped that a Research and Development Round Table, by its very existence, would do much to encourage cooperation in attacking library problems.
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Surely this is a modest proposal. It calls for no great expenditure of money or a herculean effort on the part of anyone. A Research and Development Round Table, by reporting and coordinating the research which is already being done and by bringing together the men and women who are interested in library research, could do much to bring order out of chaos, and to give direction and purpose to what is too often a hit or miss. Such an unassuming proposal certainly seems worth a try.
Library Trends

Forthcoming numbers are as follows:

January, 1958, Library Cooperation. Editor: Ralph T. Esterquest, Director, Midwest Inter-Library Center.

April, 1958, Legal Aspects of Library Administration. Editor: John B. Kaiser, Director, Newark Public Library.


The numbers of LIBRARY TRENDS issued prior to the present one dealt successively with college and university libraries, special libraries, school libraries, public libraries, libraries of the United States government, cataloging and classification, scientific management in libraries, the availability of library research materials, personnel administration, services to readers, library associations in the United States and British Commonwealth, acquisitions, national libraries, special materials and services, conservation of library materials, state and provincial libraries in the United States and Canada, American books abroad, mechanization in libraries, rare book libraries and collections, and circulation services.